GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 19:47:31 ; Search time 88.7749 Seconds
(without alignments)
371.762 Million cell updates/sec

Title: US-10-054-873-2
Perfect score: 470
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....NLELLRISLLLIQSWLEPVQ 92

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_23Sep04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	470	100.0	92	2	AAY42856	Aay42856 Human gro
2	470	100.0	134	2	AAW92265	Aaw92265 Human ant
3	470	100.0	150	2	AAY42861	Aay42861 Chimeric
4	465	98.9	140	1	AAP91041	Aap91041 Human gro
5	465	98.9	188	8	ADI47330	Adi47330 Plasmid p
6	465	98.9	192	1	AAP90129	Aap90129 Human gro
7	465	98.9	192	2	AAW92264	Aaw92264 Human ant
8	465	98.9	192	8	ADI47320	Adi47320 Plasmid p
9	465	98.9	192	8	ADI47390	Adi47390 Plasmid p
10	465	98.9	192	8	ADI47398	Adi47398 Nmer ampl
11	465	98.9	193	8	ADI47354	Adi47354 Plasmid p
12	465	98.9	206	8	ADI47384	Adi47384 Plasmid p
13	465	98.9	261	1	AAP91299	Aap91299 Human ner
14	465	98.9	262	2	AAR11740	Aar11740 Human gro
15	465	98.9	310	2	AAR03255	Aar03255 Fusion pr
16	465	98.9	391	8	ADI47363	Adi47363 Plasmid p
17	465	98.9	574	8	ADI47344	Adi47344 Plasmid p
18	465	98.9	576	8	ADI47351	Adi47351 Plasmid p
19	465	98.9	589	8	ADI47365	Adi47365 N+1mer am
20	465	98.9	786	8	ADI47367	Adi47367 Nmer ampl
21	465	98.9	810	8	ADI47388	Adi47388 Amplifica
22	462	98.3	144	2	AAR05313	Aar05313 Segment o
23	462	98.3	262	1	AAP61033	Aap61033 Human bet
24	462	98.3	794	7	ADF16507	Adf16507 Human alb
25	462	98.3	800	7	ADF16216	Adf16216 Human alb
26	460	97.9	138	1	AAP81226	Aap81226 Sequence
27	460	97.9	191	2	AAO20110	Aao20110 Protein s
28	460	97.9	191	2	AAY15809	Aay15809 Primary a
29	460	97.9	191	2	AAY04397	Aay04397 Mutant hu
30	460	97.9	191	2	AAY04396	Aay04396 Natural h
31	460	97.9	191	3	AAY78425	Aay78425 Human gro
32	460	97.9	191	4	AAO17485	Aao17485 Human gro
33	460	97.9	191	4	AAO17486	Aao17486 Human gro
34	460	97.9	191	5	ABG31865	Abg31865 Mature hu
35	460	97.9	191	5	ABG31863	Abg31863 Mature hu
36	460	97.9	191	5	ABG31860	Abg31860 Mature hu
37	460	97.9	191	5	ABG31866	Abg31866 Mature hu
38	460	97.9	191	5	ABG31857	Abg31857 Mature hu
39	460	97.9	191	5	ABG31861	Abg31861 Mature hu
40	460	97.9	191	5	ABG31862	Abg31862 Mature hu
41	460	97.9	191	5	ABG94932	Abg94932 Human gro
42	460	97.9	191	5	ABG94967	Abg94967 Human gro
43	460	97.9	191	5	ABG94975	Abg94975 Human gro
44	460	97.9	191	5	ABG94925	Abg94925 Human gro
45	460	97.9	191	5	ABG94933	Abg94933 Human gro

ALIGNMENTS

RESULT 1
AAY42856
ID AAY42856 standard; protein; 92 AA.
XX
AC AAY42856;
XX
DT 19-JAN-2000 (first entry)
XX
DE Human growth hormone (hGH) N-terminal fragment #2.
XX
KW Growth hormone; chaperone; intramolecular; insulin; precursor; folding;
KW conformation; chimeric protein; cleavable; recombinant; production;
KW yield.
XX
OS Homo sapiens.
XX
PN WO9950302-A1.
XX
PD 07-OCT-1999.
XX
PF 31-MAR-1998; 98WO-CN000052.
XX
PR 31-MAR-1998; 98WO-CN000052.
XX
PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.
XX
PI Gan Z;
XX
DR WPI; 1999-610839/52.
XX
PT New chimeric proteins containing human growth hormone fragment, used
PT particularly for the production of human insulin.
XX
PS Claim 5; Page 28; 46pp; English.
XX
CC This sequence represents an N-terminal fragment of human growth hormone
CC (hGH) which is a component of a chimeric protein (AAY42861) which also
CC contains a human insulin precursor (AAY42859). The hGH portion of the
CC chimeric protein acts as an intramolecular chaperone (IMC) for the
CC insulin precursor, enabling it to fold correctly. A cleavable peptide
CC linker with a C-terminal Arg residue (AAY42857) enables the hGH portion
CC of the chimeric protein to be removed after folding has taken place.
CC Production of recombinant human insulin via an hGH-proinsulin chimeric
CC protein can provide human insulin with correctly linked cysteine bridges
CC with fewer necessary procedural steps, and hence resulting in a higher
CC yield of human insulin. The IMC sequences not only protect insulin
CC sequences from intracellular degradation by a microorganism host, but
CC also promote the folding of the fused insulin precursor, facilitate the

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CC   solubility of the fusion protein and decrease the intermolecular
CC   interactions among the fusion proteins, thus allowing folding of the
CC   fused insulin precursor at commercially useful high concentrations. The
CC   procedural steps of cyanogen bromide cleavage, oxidative sulphitolysis
CC   and related purification steps can thus be eliminated, along with the use
CC   of high concentrations of mercaptan or the use of hydrophobic absorbent
CC   resins
XX
SQ   Sequence 92 AA;

  Query Match             100.0%;  Score 470;  DB 2;  Length 92;
  Best Local Similarity   100.0%;  Pred. No. 1.4e-39;
  Matches   92;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 2
AAW92265
ID   AAW92265 standard; protein; 134 AA.
XX
AC   AAW92265;
XX
DT   08-JUN-1999  (first entry)
XX
DE   Human anti-angiogenic peptide 16K hGH Met-1Pro133.
XX
KW   Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW   growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW   placental vascularisation; pregnancy; treatment; angiogenic disease;
KW   tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW   arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW   wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW   granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW   psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW   ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW   gene therapy; pre-eclampsia; intrauterine growth retardation;
KW   placental dysfunction.
XX
OS   Homo sapiens.
XX
PN   WO9851323-A1.
XX
PD   19-NOV-1998.
XX
PF   12-MAY-1998;   98WO-US009691.
XX
PR   13-MAY-1997;   97US-0046394P.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Weiner RI,  Martial JA,  Struman I,  Taylor R;
XX
DR   WPI; 1999-045192/04.
DR   N-PSDB; AAX01707.
XX
PT   New anti-angiogenic peptides - comprise N-terminal fragments of human
PT   placental lactogen, human growth hormone, growth hormone variant or human
PT   prolactin.
XX
PS   Claim 4; Page 49-50; 87pp; English.
XX
CC   This invention describes novel human anti-angiogenic peptides derived
CC   from 10 to 150 consecutive amino acids selected from the N-terminal end
CC   of human placental lactogen (hPL), human growth hormone (hGH), growth
CC   hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC   capillary endothelial cell proliferation and organisation (ii) inhibit
CC   angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC   least one specific receptor which does not bind an intact full length
CC   hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC   diagnosing a probable abnormality of placental vascularisation during
CC   pregnancy. The peptides can be used for treating an angiogenic disease in
CC   a subject, for inhibiting tumour formation or growth in a patient or for
CC   modulating vascularisation of a patient's placenta. In particular, the
CC   peptides can be used for preventing or treating e.g. malignant tumours,
CC   angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
CC   arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC   delayed wound healing, proliferative retinopathy such as diabetic
CC   retinopathy, macular degeneration, granulations such as those occurring
CC   in haemophilic joints, inappropriate vascularisation in wound healing
CC   such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC   tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC   pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC   Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC   leukaemia, and reproductive disorders such as follicular and luteal cysts
CC   and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC   encoding the peptides can be used in gene therapy. The measurement of
CC   abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC   can be used in assays for impairment of vascular development associated
CC   with pre-eclampsia, intrauterine growth retardation, and placental
CC   dysfunction
XX
SQ   Sequence 134 AA;

  Query Match             100.0%;  Score 470;  DB 2;  Length 134;
  Best Local Similarity   100.0%;  Pred. No. 2.1e-39;
  Matches   92;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 3
AAY42861
ID   AAY42861 standard; protein; 150 AA.
XX
AC   AAY42861;
XX
DT   19-JAN-2000  (first entry)
XX
DE   Chimeric protein, SEQ ID 7.
XX
KW   Insulin; precursor; growth hormone; chaperone; intramolecular; folding;
KW   conformation; chimeric protein; cleavable; recombinant; production;
KW   yield.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9950302-A1.
XX
PD   07-OCT-1999.
XX
PF   31-MAR-1998;   98WO-CN000052.
XX
PR   31-MAR-1998;   98WO-CN000052.
XX
PA   (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.
XX
PI   Gan Z;
XX
DR   WPI; 1999-610839/52.
XX
PT   New chimeric proteins containing human growth hormone fragment, used
PT   particularly for the production of human insulin.
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XX
PS Claim 14; Page 30-31; 46pp; English.
XX
CC This sequence represents a chimeric protein, which contains an N-terminal
CC fragment of human growth hormone (hGH) of the sequence given in AAY42856,
CC a cleavable peptide linker (AAY42857), and a human insulin precursor
CC comprising insulin A and B chains (AAY42859). The hGH portion of the
CC chimeric protein acts as an intramolecular chaperone (IMC) for the
CC insulin precursor, enabling it to fold correctly. The cleavable peptide
CC linker has a C-terminal Arg residue which enables the hGH portion of the
CC chimeric protein to be removed after folding has taken place. Production
CC of recombinant human insulin via an hGH-proinsulin chimeric protein can
CC provide human insulin with correctly linked cysteine bridges with fewer
CC necessary procedural steps, and hence resulting in a higher yield of
CC human insulin. The IMC sequences not only protect insulin sequences from
CC intracellular degradation by a microorganism host, but also promote the
CC folding of the fused insulin precursor, facilitate the solubility of the
CC fusion protein and decrease the intermolecular interactions among the
CC fusion proteins, thus allowing folding of the fused insulin precursor at
CC commercially useful high concentrations. The procedural steps of cyanogen
CC bromide cleavage, oxidative sulphitolysis and related purification steps
CC can thus be eliminated, along with the use of high concentrations of
CC mercaptan or the use of hydrophobic absorbent resins
XX
SQ Sequence 150 AA;

Query Match 100.0%; Score 470; DB 2; Length 150;
Best Local Similarity 100.0%; Pred. No. 2.4e-39;
Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
||||||||||||||||||||||||||||||||
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 4
AAP91041
ID AAP91041 standard; protein; 140 AA.
XX
AC AAP91041;
XX
DT 24-OCT-2003 (revised)
DT 14-DEC-1989 (first entry)
XX
DE Human growth hormone segment.
XX
KW Human growth hormone; fusion protein; thrombin; geriatric dementia;
KW nervous disorders; human nerve factor.
XX
OS Homo sapiens; (human).
XX
PN EP329175-A.
XX
PD 23-AUG-1989.
XX
PF 17-FEB-1989; 89EP-00102795.
XX
PR 19-FEB-1988; 88JP-00035042.
XX
PA (TOYJ) TOSOH CORP.
XX
PI Ohtsuka E;
XX
DR WPI; 1989-243092/34.
XX
PT New human nerve growth factor gene encoding fusion protein - having
PT cleavage site for thrombin, useful for treating geriatric dementia, etc.
XX
PS Disclosure; Page 21; 38pp; English.
XX
CC Human growth hormone segment, used at the N-terminal of a fusion protein,
CC which contains a thrombin recognition site, and human beta nerve growth
CC factor (beta-NGF) at the C-terminal. Beta-NGF can be used to control
CC geriatric dementia and other nervous disorders, and can be released from
CC the fusion protein by incubation with thrombin (see AAN90577-8, AAP91034,
CC AAP91299). (Updated on 24-OCT-2003 to standardise OS field)
XX
SQ Sequence 140 AA;

Query Match 98.9%; Score 465; DB 1; Length 140;
Best Local Similarity 98.9%; Pred. No. 7.1e-39;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
||||||||||||||||||||||||||||||||
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 5
ADI47330
ID ADI47330 standard; protein; 188 AA.
XX
AC ADI47330;
XX
DT 22-APR-2004 (first entry)
XX
DE Plasmid p0A11A1 amino acid sequence SEQ ID NO:18.
XX
KW multimer assembly; DNA sequence; amplification cassette;
KW monomer sequence; restriction pair member; diagnostic protein;
KW therapeutic protein.
XX
OS Synthetic.
XX
PN WO2004007687-A2.
XX
PD 22-JAN-2004.
XX
PF 16-JUL-2003; 2003WO-US022216.
XX
PR 16-JUL-2002; 2002US-0396466P.
XX
PA (BUSS/) BUSSELL S.
XX
PI Bussell S;
XX
DR WPI; 2004-122926/12.
DR N-PSDB; ADI47329.
XX
PT Multimer assembly of DNA sequences comprising an amplification cassette
PT having monomer sequences and 5' restriction pair member (RPM) at its 5'
PT terminus and 3' RPM at its 3' terminus.
XX
PS Example 2; SEQ ID NO 18; 163pp; English.
XX
CC The present invention describes a multimer assembly of DNA sequences (I)
CC comprising at least one amplification cassette (AC) having at least one
CC monomer sequence whose polymerisation is desired, and a 5' restriction
CC pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and
CC one or more of following: (a) 3'-terminal cassette comprising 3' specific
CC sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal
CC cassette comprising 5' specific sequence and 3' RPM site fused to a 5'
CC RPM site of AC. (I) can be used for expressing a diagnostic protein or
CC therapeutic protein. In (I), the diagnostic protein and therapeutic
CC protein is a cytokine, a growth factor, a hormone, a receptor, a receptor
CC ligand, an enzyme, an inhibitor, a transcription factor, a translation
CC factor, a DNA replication factor, an activator, a chaperonin, or an
CC antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta,

CC IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8,
CC IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin,
CC colony-stimulating factor-1, granulocyte colony-stimulating factor,
CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory
CC factor, tumour necrosis factor, lymphotoxin, platelet-derived growth
CC factor, fibroblast growth factors, vascular endothelial cell growth
CC factor, epidermal growth factor, transforming growth factor-beta,
CC transforming growth factor-alpha, thrombopoietin, stem cell factor,
CC oncostatin M, amphiregulin, mullerian-inhibiting substance, B-cell growth
CC factor, macrophage migration inhibiting factor, endostatin, or
CC angiostatin. The present sequence is used in the exemplification of the
CC present invention.
XX
SQ Sequence 188 AA;

Query Match 98.9%; Score 465; DB 8; Length 188;
Best Local Similarity 98.9%; Pred. No. 9.9e-39;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 6
AAP90129
ID AAP90129 standard; protein; 192 AA.
XX
AC AAP90129;
XX
DT 24-OCT-2003 (revised)
DT 25-MAR-2003 (revised)
DT 06-FEB-1996 (revised)
DT 01-NOV-1989 (first entry)
XX
DE Human growth hormone.
XX
KW Human growth hormone; fusion protein; recombinant vector.
XX
OS Homo sapiens; (Human).
XX
PN JP01144981-A.
XX
PD 07-JUN-1989.
XX
PF 02-DEC-1987; 87JP-00304937.
XX
PR 02-DEC-1987; 87JP-00304937.
XX
PA (WAKT) WAKUNAGA SEIYAKU KK.
XX
DR WPI; 1989-209284/29.
DR N-PSDB; AAN90269.
XX
PT Recombinant vector contg. fused protein aminoacid coding - composed of
PT growth hormone or its polypeptide deriv. and foreign protein.
XX
PS Disclosure; Fig 1; 19pp; Japanese.
XX
CC The invention consists of a vector contg. a fusion protein which is
CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.
CC formed by subtstn. of Met-14 with Leu) and a foreign protein. Stability
CC of the vector in the host is greatly increased so the protein yield is
CC higher. (Updated on 25-MAR-2003 to correct PA field.) (Updated on 24-OCT-
CC 2003 to standardise OS field)
XX
SQ Sequence 192 AA;

Query Match 98.9%; Score 465; DB 1; Length 192;
Best Local Similarity 98.9%; Pred. No. 1e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 7
AAW92264
ID AAW92264 standard; protein; 192 AA.
XX
AC AAW92264;
XX
DT 08-JUN-1999 (first entry)
XX
DE Human anti-angiogenic peptide hGH Met-1Phe191.
XX
KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.
XX
OS Homo sapiens.
XX
PN WO9851323-A1.
XX
PD 19-NOV-1998.
XX
PF 12-MAY-1998; 98WO-US009691.
XX
PR 13-MAY-1997; 97US-0046394P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Weiner RI, Martial JA, Struman I, Taylor R;
XX
DR WPI; 1999-045192/04.
DR N-PSDB; AAX01706.
XX
PT New anti-angiogenic peptides - comprise N-terminal fragments of human
PT placental lactogen, human growth hormone, growth hormone variant or human
PT prolactin.
XX
PS Example 3; Page 49; 87pp; English.
XX
CC This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vascularisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vascularisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic

CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vascularisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC leukaemia, and reproductive disorders such as follicular and luteal cysts
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction
XX
SQ Sequence 192 AA;

Query Match 98.9%; Score 465; DB 2; Length 192;
Best Local Similarity 98.9%; Pred. No. 1e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 8
ADI47320
ID ADI47320 standard; protein; 192 AA.
XX
AC ADI47320;
XX
DT 22-APR-2004 (first entry)
XX
DE Plasmid p0A0 amino acid sequence SEQ ID NO:8.
XX
KW multimer assembly; DNA sequence; amplification cassette;
KW monomer sequence; restriction pair member; diagnostic protein;
KW therapeutic protein.
XX
OS Synthetic.
XX
PN WO2004007687-A2.
XX
PD 22-JAN-2004.
XX
PF 16-JUL-2003; 2003WO-US022216.
XX
PR 16-JUL-2002; 2002US-0396466P.
XX
PA (BUSS/) BUSSELL S.
XX
PI Bussell S;
XX
DR WPI; 2004-122926/12.
DR N-PSDB; ADI47319.
XX
PT Multimer assembly of DNA sequences comprising an amplification cassette
PT having monomer sequences and 5' restriction pair member (RPM) at its 5'
PT terminus and 3' RPM at its 3' terminus.
XX
PS Example 1; SEQ ID NO 8; 163pp; English.
XX
CC The present invention describes a multimer assembly of DNA sequences (I)
CC comprising at least one amplification cassette (AC) having at least one
CC monomer sequence whose polymerisation is desired, and a 5' restriction
CC pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and
CC one or more of following: (a) 3'-terminal cassette comprising 3' specific
CC sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal
CC cassette comprising 5' specific sequence and 3' RPM site fused to a 5'
CC RPM site of AC. (I) can be used for expressing a diagnostic protein or
CC therapeutic protein. In (I), the diagnostic protein and therapeutic
CC protein is a cytokine, a growth factor, a hormone, a receptor, a receptor
CC ligand, an enzyme, an inhibitor, a transcription factor, a translation
CC factor, a DNA replication factor, an activator, a chaperonin, or an
CC antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta,
CC IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8,
CC IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin,
CC colony-stimulating factor-1, granulocyte colony-stimulating factor,
CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory
CC factor, tumour necrosis factor, lymphotoxin, platelet-derived growth
CC factor, fibroblast growth factors, vascular endothelial cell growth
CC factor, epidermal growth factor, transforming growth factor-beta,
CC transforming growth factor-alpha, thrombopoietin, stem cell factor,
CC oncostatin M, amphiregulin, mullerian-inhibiting substance, B-cell growth
CC factor, macrophage migration inhibiting factor, endostatin, or
CC angiostatin. The present sequence is used in the exemplification of the
CC present invention.
XX
SQ Sequence 192 AA;

Query Match 98.9%; Score 465; DB 8; Length 192;
Best Local Similarity 98.9%; Pred. No. 1e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 9
ADI47390
ID ADI47390 standard; protein; 192 AA.
XX
AC ADI47390;
XX
DT 22-APR-2004 (first entry)
XX
DE Plasmid p0A51A amino acid sequence SEQ ID NO:78.
XX
KW multimer assembly; DNA sequence; amplification cassette;
KW monomer sequence; restriction pair member; diagnostic protein;
KW therapeutic protein.
XX
OS Synthetic.
XX
PN WO2004007687-A2.
XX
PD 22-JAN-2004.
XX
PF 16-JUL-2003; 2003WO-US022216.
XX
PR 16-JUL-2002; 2002US-0396466P.
XX
PA (BUSS/) BUSSELL S.
XX
PI Bussell S;
XX
DR WPI; 2004-122926/12.
DR P-PSDB; ADI47389.
XX
PT Multimer assembly of DNA sequences comprising an amplification cassette
PT having monomer sequences and 5' restriction pair member (RPM) at its 5'
PT terminus and 3' RPM at its 3' terminus.
XX
PS Example 12; SEQ ID NO 78; 163pp; English.
XX
CC The present invention describes a multimer assembly of DNA sequences (I)
CC comprising at least one amplification cassette (AC) having at least one

CC monomer sequence whose polymerisation is desired, and a 5' restriction
CC pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and
CC one or more of following: (a) 3'-terminal cassette comprising 3' specific
CC sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal
CC cassette comprising 5' specific sequence and 3' RPM site fused to a 5'
CC RPM site of AC. (I) can be used for expressing a diagnostic protein or
CC therapeutic protein. In (I), the diagnostic protein and therapeutic
CC protein is a cytokine, a growth factor, a hormone, a receptor, a receptor
CC ligand, an enzyme, an inhibitor, a transcription factor, a translation
CC factor, a DNA replication factor, an activator, a chaperonin, or an
CC antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta,
CC IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8,
CC IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin,
CC colony-stimulating factor-1, granulocyte colony-stimulating factor,
CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory
CC factor, tumour necrosis factor, lymphotoxin, platelet-derived growth
CC factor, fibroblast growth factors, vascular endothelial cell growth
CC factor, epidermal growth factor, transforming growth factor-beta,
CC transforming growth factor-alpha, thrombopoietin, stem cell factor,
CC oncostatin M, amphiregulin, mullerian-inhibiting substance, B-cell growth
CC factor, macrophage migration inhibiting factor, endostatin, or
CC angiostatin. The present sequence is used in the exemplification of the
CC present invention.
XX
SQ Sequence 192 AA;

```
  Query Match             98.9%;  Score 465;  DB 8;  Length 192;
  Best Local Similarity   98.9%;  Pred. No. 1e-38;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
```

RESULT 10
ADI47398
ID ADI47398 standard; protein; 192 AA.
XX
AC ADI47398;
XX
DT 22-APR-2004 (first entry)
XX
DE Nmer amplification cassette amino acid sequence SEQ ID NO:86.
XX
KW multimer assembly; DNA sequence; amplification cassette;
KW monomer sequence; restriction pair member; diagnostic protein;
KW therapeutic protein.
XX
OS Synthetic.
XX
PN WO2004007687-A2.
XX
PD 22-JAN-2004.
XX
PF 16-JUL-2003; 2003WO-US022216.
XX
PR 16-JUL-2002; 2002US-0396466P.
XX
PA (BUSS/) BUSSELL S.
XX
PI Bussell S;
XX
DR WPI; 2004-122926/12.
DR P-PSDB; ADI47397.
XX
PT Multimer assembly of DNA sequences comprising an amplification cassette
PT having monomer sequences and 5' restriction pair member (RPM) at its 5'
PT terminus and 3' RPM at its 3' terminus.
XX
PS Claim 115; SEQ ID NO 86; 163pp; English.
XX
CC The present invention describes a multimer assembly of DNA sequences (I)
CC comprising at least one amplification cassette (AC) having at least one
CC monomer sequence whose polymerisation is desired, and a 5' restriction
CC pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and
CC one or more of following: (a) 3'-terminal cassette comprising 3' specific
CC sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal
CC cassette comprising 5' specific sequence and 3' RPM site fused to a 5'
CC RPM site of AC. (I) can be used for expressing a diagnostic protein or
CC therapeutic protein. In (I), the diagnostic protein and therapeutic
CC protein is a cytokine, a growth factor, a hormone, a receptor, a receptor
CC ligand, an enzyme, an inhibitor, a transcription factor, a translation
CC factor, a DNA replication factor, an activator, a chaperonin, or an
CC antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta,
CC IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8,
CC IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin,
CC colony-stimulating factor-1, granulocyte colony-stimulating factor,
CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory
CC factor, tumour necrosis factor, lymphotoxin, platelet-derived growth
CC factor, fibroblast growth factors, vascular endothelial cell growth
CC factor, epidermal growth factor, transforming growth factor-beta,
CC transforming growth factor-alpha, thrombopoietin, stem cell factor,
CC oncostatin M, amphiregulin, mullerian-inhibiting substance, B-cell growth
CC factor, macrophage migration inhibiting factor, endostatin, or
CC angiostatin. The present sequence is used in the exemplification of the
CC present invention.
XX
SQ Sequence 192 AA;

```
  Query Match             98.9%;  Score 465;  DB 8;  Length 192;
  Best Local Similarity   98.9%;  Pred. No. 1e-38;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
```

RESULT 11
ADI47354
ID ADI47354 standard; protein; 193 AA.
XX
AC ADI47354;
XX
DT 22-APR-2004 (first entry)
XX
DE Plasmid p0A31A amino acid sequence SEQ ID NO:42.
XX
KW multimer assembly; DNA sequence; amplification cassette;
KW monomer sequence; restriction pair member; diagnostic protein;
KW therapeutic protein.
XX
OS Synthetic.
XX
PN WO2004007687-A2.
XX
PD 22-JAN-2004.
XX
PF 16-JUL-2003; 2003WO-US022216.
XX
PR 16-JUL-2002; 2002US-0396466P.
XX
PA (BUSS/) BUSSELL S.
XX
PI Bussell S;
XX
DR WPI; 2004-122926/12.

DR N-PSDB; ADI47353.
XX
PT Multimer assembly of DNA sequences comprising an amplification cassette
PT having monomer sequences and 5' restriction pair member (RPM) at its 5'
PT terminus and 3' RPM at its 3' terminus.
XX
PS Example 7; SEQ ID NO 42; 163pp; English.
XX
CC The present invention describes a multimer assembly of DNA sequences (I)
CC comprising at least one amplification cassette (AC) having at least one
CC monomer sequence whose polymerisation is desired, and a 5' restriction
CC pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and
CC one or more of following: (a) 3'-terminal cassette comprising 3' specific
CC sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal
CC cassette comprising 5' specific sequence and 3' RPM site fused to a 5'
CC RPM site of AC. (I) can be used for expressing a diagnostic protein or
CC therapeutic protein. In (I), the diagnostic protein and therapeutic
CC protein is a cytokine, a growth factor, a hormone, a receptor, a receptor
CC ligand, an enzyme, an inhibitor, a transcription factor, a translation
CC factor, a DNA replication factor, an activator, a chaperonin, or an
CC antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta,
CC IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8,
CC IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin,
CC colony-stimulating factor-1, granulocyte colony-stimulating factor,
CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory
CC factor, tumour necrosis factor, lymphotoxin, platelet-derived growth
CC factor, fibroblast growth factors, vascular endothelial cell growth
CC factor, epidermal growth factor, transforming growth factor-beta,
CC transforming growth factor-alpha, thrombopoietin, stem cell factor,
CC oncostatin M, amphiregulin, mullerian-inhibiting substance, B-cell growth
CC factor, macrophage migration inhibiting factor, endostatin, or
CC angiostatin. The present sequence is used in the exemplification of the
CC present invention.
XX
SQ Sequence 193 AA;

Query Match 98.9%; Score 465; DB 8; Length 193;
Best Local Similarity 98.9%; Pred. No. 1e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
```

RESULT 12
ADI47384
ID ADI47384 standard; protein; 206 AA.
XX
AC ADI47384;
XX
DT 22-APR-2004 (first entry)
XX
DE Plasmid p0A43A insert amino acid sequence SEQ ID NO:72.
XX
KW multimer assembly; DNA sequence; amplification cassette;
KW monomer sequence; restriction pair member; diagnostic protein;
KW therapeutic protein.
XX
OS Synthetic.
XX
PN WO2004007687-A2.
XX
PD 22-JAN-2004.
XX
PF 16-JUL-2003; 2003WO-US022216.
XX
PR 16-JUL-2002; 2002US-0396466P.
XX
PA (BUSS/) BUSSELL S.
XX
PI Bussell S;
XX
DR WPI; 2004-122926/12.
DR P-PSDB; ADI47383.
XX
PT Multimer assembly of DNA sequences comprising an amplification cassette
PT having monomer sequences and 5' restriction pair member (RPM) at its 5'
PT terminus and 3' RPM at its 3' terminus.
XX
PS Example 11; SEQ ID NO 72; 163pp; English.
XX
CC The present invention describes a multimer assembly of DNA sequences (I)
CC comprising at least one amplification cassette (AC) having at least one
CC monomer sequence whose polymerisation is desired, and a 5' restriction
CC pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and
CC one or more of following: (a) 3'-terminal cassette comprising 3' specific
CC sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal
CC cassette comprising 5' specific sequence and 3' RPM site fused to a 5'
CC RPM site of AC. (I) can be used for expressing a diagnostic protein or
CC therapeutic protein. In (I), the diagnostic protein and therapeutic
CC protein is a cytokine, a growth factor, a hormone, a receptor, a receptor
CC ligand, an enzyme, an inhibitor, a transcription factor, a translation
CC factor, a DNA replication factor, an activator, a chaperonin, or an
CC antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta,
CC IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8,
CC IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin,
CC colony-stimulating factor-1, granulocyte colony-stimulating factor,
CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory
CC factor, tumour necrosis factor, lymphotoxin, platelet-derived growth
CC factor, fibroblast growth factors, vascular endothelial cell growth
CC factor, epidermal growth factor, transforming growth factor-beta,
CC transforming growth factor-alpha, thrombopoietin, stem cell factor,
CC oncostatin M, amphiregulin, mullerian-inhibiting substance, B-cell growth
CC factor, macrophage migration inhibiting factor, endostatin, or
CC angiostatin. The present sequence is used in the exemplification of the
CC present invention.
XX
SQ Sequence 206 AA;

Query Match 98.9%; Score 465; DB 8; Length 206;
Best Local Similarity 98.9%; Pred. No. 1.1e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
```

RESULT 13
AAP91299
ID AAP91299 standard; protein; 261 AA.
XX
AC AAP91299;
XX
DT 24-OCT-2003 (revised)
DT 14-DEC-1989 (first entry)
XX
DE Human nerve growth factor and human growth hormone fusion protein.
XX
KW Human nerve growth factor; fusion protein; thrombin; geriatric dementia;
KW nervous disorders; human growth hormone.
XX
OS Homo sapiens; (human).
XX
FH Key Location/Qualifiers
FT Region 1. .140
FT Region 141. .143

FT Region 144. .261
XX
PN EP329175-A.
XX
PD 23-AUG-1989.
XX
PF 17-FEB-1989; 89EP-00102795.
XX
PR 19-FEB-1988; 88JP-00035042.
XX
PA (TOYJ) TOSOH CORP.
XX
PI Ohtsuka E;
XX
DR WPI; 1989-243092/34.
XX
PT New human nerve growth factor gene encoding fusion protein - having
PT cleavage site for thrombin, useful for treating geriatric dementia, etc.
XX
PS Claim 36; Page 31-32; 38pp; English.
XX
CC Fusion protein consisting of human growth hormone at the N-terminal end
CC (1st region), a 3 amino acid sequence representing thrombin recognition
CC site, and human beta nerve growth factor (beta-NGF) at the C-terminal.
CC Beta-NGF can be used to control geriatric dementia and other nervous
CC disorders, and can be released from the fusion protein by incubation with
CC thrombin (see AAN90577-8, AAP91034, AAP91041). (Updated on 24-OCT-2003 to
CC standardise OS field)
XX
SQ Sequence 261 AA;

Query Match 98.9%; Score 465; DB 1; Length 261;
Best Local Similarity 98.9%; Pred. No. 1.4e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
||||||||||||||||||||||||||||||||
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 14
AAR11740
ID AAR11740 standard; protein; 262 AA.
XX
AC AAR11740;
XX
DT 25-MAR-2003 (revised)
DT 25-JUN-1991 (first entry)
XX
DE Human growth hormone/human nerve growth factor beta fusion protein.
XX
KW hGH; hNGF; nervous system diseases; dementia.
XX
OS Homo sapiens.
XX
PN JP03067598-A.
XX
PD 22-MAR-1991.
XX
PF 07-AUG-1989; 89JP-00202835.
XX
PR 07-AUG-1989; 89JP-00202835.
XX
PA (TOYJ) TOSOH CORP.
XX
DR WPI; 1991-128768/18.
DR N-PSDB; AAQ11578.
XX
PT Purificn. of human neuron growth factor beta-sub:unit-contg. protein - by
PT contacting with gel having cation exchange gp. in presence of urea.
XX
PS Disclosure; Fig 1; 7pp; Japanese.
XX
CC A recombinant human nerve growth factor beta subunit-contg. protein can
CC be produced as this fusion protein. It is purified by contacting a gel
CC having a cation exchange gp. with the fusion protein, in the presence of
CC urea. The purified protein is useful in a medicament for treating
CC disorders of the nervous system, eg dementia. (Updated on 25-MAR-2003 to
CC correct PF field.)
XX
SQ Sequence 262 AA;

Query Match 98.9%; Score 465; DB 2; Length 262;
Best Local Similarity 98.9%; Pred. No. 1.4e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
||||||||||||||||||||||||||||||||
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 15
AAR03255
ID AAR03255 standard; protein; 310 AA.
XX
AC AAR03255;
XX
DT 19-JUL-1990 (first entry)
XX
DE Fusion protein of B-cell stimulatory factor-2 and B-cell differentiation
DE factor.
XX
KW B-cell stimulatory factor-2; interleukin-6; B-cell differentiation;
KW interleukin-5; fusion protein.
XX
OS Homo sapiens.
XX
PN JP02013375-A.
XX
PD 17-JAN-1990.
XX
PF 01-JUL-1988; 88JP-00162556.
XX
PR 01-JUL-1988; 88JP-00162556.
XX
PA (TOYJ) TOSOH CORP.
XX
DR WPI; 1990-062207/09.
DR N-PSDB; AAQ02028.
XX
PT Prepn. of human B cell differentiation factor - from specified DNA
PT sequence segment, by recombinant DNA technique, gives protein of
PT specified amino acid sequence.
XX
PS Claim 31; Page 9; 17pp; Japanese.
XX
CC The protein is produced by fusing DNA encoding BDF (IL-) with DNA
CC encoding BSF-2 (IL-5)and ligating the product into an expression vector
CC See also AAR05311 and AAR05313
XX
SQ Sequence 310 AA;

Query Match 98.9%; Score 465; DB 2; Length 310;
Best Local Similarity 98.9%; Pred. No. 1.7e-38;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||

```
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
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Search completed: November 2, 2004, 20:11:39
Job time : 89.7749 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 20:02:41 ; Search time 22.4059 Seconds
(without alignments)
272.306 Million cell updates/sec

Title: US-10-054-873-2
Perfect score: 470
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....NLELLRISLLLIQSWLEPVQ 92

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 478139 seqs, 66318000 residues

Total number of hits satisfying chosen parameters: 478139

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	465	98.9	192	1	US-08-093-383-1	Sequence 1, Appli
2	460	97.9	191	3	US-09-284-878-5	Sequence 5, Appli
3	460	97.9	191	4	US-09-462-941-1	Sequence 1, Appli
4	460	97.9	191	4	US-09-554-451-1	Sequence 1, Appli
5	460	97.9	194	2	US-08-383-621-4	Sequence 4, Appli
6	460	97.9	194	3	US-08-459-906-4	Sequence 4, Appli
7	460	97.9	217	3	US-08-589-028-10	Sequence 10, Appl
8	460	97.9	217	3	US-08-784-582-10	Sequence 10, Appl
9	460	97.9	217	3	US-08-785-271-10	Sequence 10, Appl
10	460	97.9	217	3	US-08-759-628-11	Sequence 11, Appl
11	460	97.9	217	3	US-09-284-878-1	Sequence 1, Appli
12	460	97.9	217	4	US-09-929-918-9	Sequence 9, Appli
13	460	97.9	241	3	US-09-424-620B-25	Sequence 25, Appl
14	460	97.9	245	4	US-09-280-030-66	Sequence 66, Appl
15	460	97.9	274	3	US-08-784-582-71	Sequence 71, Appl
16	460	97.9	360	3	US-08-784-582-73	Sequence 73, Appl
17	455	96.8	191	4	US-09-554-451-3	Sequence 3, Appli
18	454	96.6	191	3	US-09-465-461-1	Sequence 1, Appli
19	454	96.6	217	1	US-08-187-756C-4	Sequence 4, Appli
20	454	96.6	217	1	US-08-469-486-51	Sequence 51, Appl
21	454	96.6	217	2	US-08-469-658-51	Sequence 51, Appl
22	454	96.6	217	2	US-08-710-324A-4	Sequence 4, Appli
23	454	96.6	217	4	US-09-411-657-4	Sequence 4, Appli
24	453	96.4	400	4	US-09-420-819-37	Sequence 37, Appl
25	453	96.4	401	4	US-09-420-819-36	Sequence 36, Appl
26	447	95.1	191	3	US-08-800-215C-18	Sequence 18, Appl
27	445	94.7	191	3	US-08-800-215C-16	Sequence 16, Appl
28	445	94.7	191	3	US-08-800-215C-20	Sequence 20, Appl
29	364.5	77.6	176	3	US-08-791-728-1	Sequence 1, Appli
30	364.5	77.6	176	3	US-08-990-774-1	Sequence 1, Appli
31	358.5	76.3	176	3	US-08-791-728-2	Sequence 2, Appli
32	358.5	76.3	176	3	US-08-990-774-2	Sequence 2, Appli
33	340	72.3	168	6	5424199-3	Patent No. 5424199
34	333.5	71.0	198	1	US-08-187-756C-5	Sequence 5, Appli
35	333.5	71.0	198	2	US-08-710-324A-5	Sequence 5, Appli
36	333.5	71.0	198	4	US-09-411-657-5	Sequence 5, Appli
37	306.5	65.2	191	1	US-08-468-824-8	Sequence 8, Appli
38	304.5	64.8	191	1	US-07-963-331D-4	Sequence 4, Appli
39	302.5	64.4	216	2	US-09-105-651-1	Sequence 1, Appli
40	301.5	64.1	190	1	US-08-388-267C-2	Sequence 2, Appli
41	301.5	64.1	190	3	US-09-277-720-2	Sequence 2, Appli
42	301.5	64.1	191	6	5210180-1	Patent No. 5210180
43	301.5	64.1	193	1	US-07-621-197C-2	Sequence 2, Appli
44	301.5	64.1	193	1	US-08-363-982-2	Sequence 2, Appli
45	301.5	64.1	193	2	US-08-383-621-1	Sequence 1, Appli

ALIGNMENTS

```
RESULT 1
US-08-093-383-1
; Sequence 1, Application US/08093383
; Patent No. 5489529
;  GENERAL INFORMATION:
;    APPLICANT:  DeBoer, Herman A.
;    APPLICANT:  Heyneker, Herbert L.
;    APPLICANT:  Seeburg, Peter H.
;    TITLE OF INVENTION:  DNA for Expression of Bovine Growth Hormone
;    NUMBER OF SEQUENCES:  30
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  460 Point San Bruno Blvd
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  5.25 inch, 360 Kb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  patin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/093,383
;      FILING DATE:  14-JUL-1993
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  07/619827
;      FILING DATE:  28-NOV-1990
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  07/198824
;      FILING DATE:  05-APR-1988
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  06/632361
;      FILING DATE:  19-JUL-1984
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  06/303687
;      FILING DATE:  18-SEP-1981
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Johnston, Sean A.
;      REGISTRATION NUMBER:  P35,910
;      REFERENCE/DOCKET NUMBER:  46C4
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415/225-3562
;      TELEFAX:  415/952-9881
;      TELEX:  910/371-7168
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  192 amino acids
;      TYPE:  amino acid
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;     TOPOLOGY:  linear
US-08-093-383-1

  Query Match             98.9%;  Score 465;  DB 1;  Length 192;
  Best Local Similarity   98.9%;  Pred. No. 2.4e-51;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 2
US-09-284-878-5
; Sequence 5, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:
;  APPLICANT:  Olazaran, Martha Guerrero
;  APPLICANT:  Saldana, Hugo Barrera
;  APPLICANT:  Salvado, Jose Maria Viader
;  TITLE OF INVENTION:  Genetically Modified Methylotrophic P. pastoris Yeast for the
;  TITLE OF INVENTION:  Production and Secretion of the Human Growth Hormone
;  FILE REFERENCE:  1829.0010000
;  CURRENT APPLICATION NUMBER: US/09/284,878
;  CURRENT FILING DATE:  1999-07-21
;  PRIOR APPLICATION NUMBER:  PCT/MX97/00033
;  PRIOR FILING DATE:  1997-10-24
;  NUMBER OF SEQ ID NOS:  9
;  SOFTWARE:  PatentIn Ver. 2.1
; SEQ ID NO 5
;    LENGTH: 191
;    TYPE: PRT
;    ORGANISM: Homo sapiens
US-09-284-878-5

  Query Match             97.9%;  Score 460;  DB 3;  Length 191;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 60

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 91


RESULT 3
US-09-462-941-1
; Sequence 1, Application US/09462941
; Patent No. 6608183
; GENERAL INFORMATION:
;  APPLICANT: Cox III, George N
;  APPLICANT:  Bolder Biotechnology, Inc.
;  TITLE OF INVENTION: Derivatives of Growth Hormone and Related Proteins
;  FILE REFERENCE: 4152-1-PUS
;  CURRENT APPLICATION NUMBER: US/09/462,941
;  CURRENT FILING DATE:  2000-01-14
;  PRIOR APPLICATION NUMBER: 60/052,516
;  PRIOR FILING DATE: 1997-07-14
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
;    LENGTH: 191
;    TYPE: PRT
;    ORGANISM: Homo sapiens
US-09-462-941-1

  Query Match             97.9%;  Score 460;  DB 4;  Length 191;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 60

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 91


RESULT 4
US-09-554-451-1
; Sequence 1, Application US/09554451
; Patent No. 6680207
;   GENERAL INFORMATION:
;        APPLICANT: Jonathan Paul MURPHY
;                   Anthony ATKINSON
;        TITLE OF INVENTION: Detection of Molecules in Samples
;        NUMBER OF SEQUENCES: 9
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Pillsbury Winthrop, L.L.P.
;             STREET: 1100 New York Ave., N.W.
;             CITY: Washington
;             STATE: D.C.
;             COUNTRY: U.S.A.
;             ZIP: 20005
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: MS Word
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/554,451
;             FILING DATE: 15-May-2000
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: PCT/GB98/03449
;             FILING DATE: No. 6680207ember 16, 1998
;             APPLICATION NUMBER: GB 9723955.2
;             FILING DATE: No. 6680207ember 14, 1997
;   INFORMATION FOR SEQ ID NO: 1:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 191 amino acids
;             TYPE: amino acid
;             STRANDEDNESS: single
;             TOPOLOGY: linear
;        SEQUENCE DESCRIPTION: SEQ ID NO: 1:
US-09-554-451-1

  Query Match             97.9%;  Score 460;  DB 4;  Length 191;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 60

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 91


RESULT 5
US-08-383-621-4
; Sequence 4, Application US/08383621
; Patent No. 5951972
;  GENERAL INFORMATION:
;    APPLICANT:  Daley, Michael J.
;    APPLICANT:  Buckwalter, Brian L.
;    APPLICANT:  Cady, Susan M.
```

```
;    APPLICANT:  Shieh, Hong-Ming
;    APPLICANT:  Bohlen, Peter
;    APPLICANT:  Seddon, Andrew P.
;    TITLE OF INVENTION:  Stabilization Of Somatotropins And Other
;    TITLE OF INVENTION:  Proteins By Modification Of Cysteine Residues
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Dr. Estelle J. Tsevdos
;      STREET:  1937 West Main Street, P.O. Box 60
;      CITY:  Stamford
;      STATE:  Connecticut
;      COUNTRY:  U.S.A.
;      ZIP:  06904-0060
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/383,621
;      FILING DATE:  06-FEB-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/766,142
;      FILING DATE:  25-SEP-1991
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Tsevdos, Estelle J.
;      REGISTRATION NUMBER:  31,145
;      REFERENCE/DOCKET NUMBER:  31,278-01
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  203-321-2756
;      TELEFAX:  203-321-2971
;      TELEX:  203-710-474-4059
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  194 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-383-621-4

  Query Match             97.9%;  Score 460;  DB 2;  Length 194;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db          4 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 63

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         64 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 94


RESULT 6
US-08-459-906-4
; Sequence 4, Application US/08459906
; Patent No. 6010999
;  GENERAL INFORMATION:
;    APPLICANT:  Daley, Michael J.
;    APPLICANT:  Buckwalter, Brian L.
;    APPLICANT:  Cady, Susan M.
;    APPLICANT:  Shieh, Hong-Ming
;    APPLICANT:  Bohlen, Peter
;    APPLICANT:  Seddon, Andrew P.
;    TITLE OF INVENTION:  Stabilization of Somatotropins and Other
;    TITLE OF INVENTION:  Proteins by Modification of Cysteine Residues
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  American Cyanamid Company
;      STREET:  One Cyanamid Plaza
;      CITY:  Wayne
;      STATE:  New Jersey
;      COUNTRY:  U.S.A.
;      ZIP:  07470-8426
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/459,906
;      FILING DATE:  02-JUN-1995
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Webster, Darryl L.
;      REGISTRATION NUMBER:  34,276
;      REFERENCE/DOCKET NUMBER:  31,278-03
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  201-831-3247
;      TELEFAX:  201-831-3305
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  194 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-459-906-4

  Query Match             97.9%;  Score 460;  DB 3;  Length 194;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db          4 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 63

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         64 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 94


RESULT 7
US-08-589-028-10
; Sequence 10, Application US/08589028
; Patent No. 6087129
;  GENERAL INFORMATION:
;    APPLICANT:  Newgard, Christopher B.
;    APPLICANT:  Halban, Philippe
;    APPLICANT:  No. 6087129mington, Karl D.
;    APPLICANT:  Clark, Samuel A.
;    APPLICANT:  Thigpen, Anice E.
;    APPLICANT:  Quaade, Christian
;    APPLICANT:  Kruse, Fred
;    TITLE OF INVENTION:  Recombinant Expression of Proteins From
;    TITLE OF INVENTION:  Secretory Cell Lines
;    NUMBER OF SEQUENCES:  50
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P. O. Box 4433
;      CITY:  Houston
;      STATE:  TX
;      COUNTRY:  USA
;      ZIP:  77210-4433
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/589,028
;      FILING DATE:  Concurrently Herewith
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Highlander, Steven L.
;      REGISTRATION NUMBER:  47,642
```

```
;      REFERENCE/DOCKET NUMBER:  UTSD:426\HYL
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (512) 474-7577
;  INFORMATION FOR SEQ ID NO:  10:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  217 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  linear
US-08-589-028-10

  Query Match             97.9%;  Score 460;  DB 3;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.3e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 8
US-08-784-582-10
; Sequence 10, Application US/08784582
; Patent No. 6110707
;  GENERAL INFORMATION:
;    APPLICANT:  Newgard, Christopher B.
;    APPLICANT:  Halban, Philippe A.
;    APPLICANT:  No. 6110707mington, Karl D.
;    APPLICANT:  Clark, Samuel A.
;    APPLICANT:  Thigpen, Anice E.
;    APPLICANT:  Quaade, Christian
;    APPLICANT:  Kruse, Fred
;    APPLICANT:  McGarry, Dennis
;    TITLE OF INVENTION:  RECOMBINANT EXPRESSION OF PROTEINS FROM
;    TITLE OF INVENTION:  SECRETORY CELL LINES
;    NUMBER OF SEQUENCES:  79
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  USA
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/784,582
;      FILING DATE:  Concurrently Herewith
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 60/028,427
;      FILING DATE:  15-OCT-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/589,028
;      FILING DATE:  19-JAN-1996
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Highlander, Steven L.
;      REGISTRATION NUMBER:  37,642
;      REFERENCE/DOCKET NUMBER:  UTSD:514
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  512/418-3000
;      TELEFAX:  512/474-7577
;  INFORMATION FOR SEQ ID NO:  10:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  217 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  linear
US-08-784-582-10

  Query Match             97.9%;  Score 460;  DB 3;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.3e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 9
US-08-785-271-10
; Sequence 10, Application US/08785271
; Patent No. 6194176
;  GENERAL INFORMATION:
;    APPLICANT:  Newgard, Christopher B.
;    APPLICANT:  Halban, Philippe A.
;    APPLICANT:  No. 6194176mington, Karl D.
;    APPLICANT:  Clark, Samuel A.
;    APPLICANT:  Thigpen, Anice E.
;    APPLICANT:  Quaade, Christian
;    APPLICANT:  Kruse, Fred
;    TITLE OF INVENTION:  RECOMBINANT EXPRESSION OF PROTEINS FROM
;    TITLE OF INVENTION:  SECRETORY CELL LINES
;    NUMBER OF SEQUENCES:  56
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  USA
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/785,271
;      FILING DATE:  Concurrently Herewith
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/589,028
;      FILING DATE:  19-JAN-1996
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Highlander, Steven L.
;      REGISTRATION NUMBER:  37,642
;      REFERENCE/DOCKET NUMBER:  UTSD:513
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  512/418-3000
;      TELEFAX:  512/474-7577
;  INFORMATION FOR SEQ ID NO:  10:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  217 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  linear
US-08-785-271-10

  Query Match             97.9%;  Score 460;  DB 3;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.3e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 10
US-08-759-628-11
; Sequence 11, Application US/08759628
; Patent No. 6225446
;  GENERAL INFORMATION:
;    APPLICANT:  Altmann, Scott W.
;    APPLICANT:  Rock, Fernando L.
;    APPLICANT:  Bazan, J. Fernando
;    APPLICANT:  Kastelein, Robert A.
;    TITLE OF INVENTION:  MUTATIONAL VARIANTS OF MAMMLIAN PROTEINS
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  DNAX Research Institute
;      STREET:  901 California Avenue
;      CITY:  Palo Alto
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94304-1104
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/759,628
;      FILING DATE:  05-DEC-1996
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 60/008,574
;      FILING DATE:  06-DEC-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Ching, Edwin P.
;      REGISTRATION NUMBER:  34,090
;      REFERENCE/DOCKET NUMBER:  DX0552Q
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-852-9196
;      TELEFAX:  415-496-1200
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  217 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  32..53
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  94..115
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  133..153
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  192..210
;      OTHER INFORMATION:  /note= "The peptides above are
;      OTHER INFORMATION:  depicted in Figure 1"
US-08-759-628-11

  Query Match             97.9%;  Score 460;  DB 3;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.3e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 11
US-09-284-878-1
; Sequence 1, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:
;  APPLICANT:  Olazaran, Martha Guerrero
;  APPLICANT:  Saldana, Hugo Barrera
;  APPLICANT:  Salvado, Jose Maria Viader
;  TITLE OF INVENTION:  Genetically Modified Methylotrophic P. pastoris Yeast for the
;  TITLE OF INVENTION:  Production and Secretion of the Human Growth Hormone
;  FILE REFERENCE:  1829.0010000
;  CURRENT APPLICATION NUMBER: US/09/284,878
;  CURRENT FILING DATE:  1999-07-21
;  PRIOR APPLICATION NUMBER:  PCT/MX97/00033
;  PRIOR FILING DATE:  1997-10-24
;  NUMBER OF SEQ ID NOS:  9
;  SOFTWARE:  PatentIn Ver. 2.1
; SEQ ID NO 1
;   LENGTH: 217
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-284-878-1

  Query Match             97.9%;  Score 460;  DB 3;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.3e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||

Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 12
US-09-929-918-9
; Sequence 9, Application US/09929918
; Patent No. 6773899
; GENERAL INFORMATION:
;  APPLICANT: Kordyum, Vitaliy A.
;  APPLICANT:  Chernykh, Svitlana I.
;  APPLICANT:  Slavchenko, Iryna Yu.
;  APPLICANT:  Vozianov, Oleksandr
;  TITLE OF INVENTION: PHAGE-DEPENDENT SUPER PRODUCTION OF
;  TITLE OF INVENTION:  BIOLOGICALLY ACTIVE PROTEIN AND PEPTIDES
;  FILE REFERENCE: PHAGE.006A
;  CURRENT APPLICATION NUMBER: US/09/929,918
;  CURRENT FILING DATE:  2001-08-15
;  PRIOR APPLICATION NUMBER: 09/318,288
;  PRIOR FILING DATE: 1999-05-25
;  NUMBER OF SEQ ID NOS: 11
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 9
;   LENGTH: 217
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-929-918-9

  Query Match             97.9%;  Score 460;  DB 4;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.3e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 13
US-09-424-620B-25
; Sequence 25, Application US/09424620B
; Patent No. 6391585
;  GENERAL INFORMATION:
;       APPLICANT: HANIL SYNTHETIC FIBER CO., LTD.
;                  JANG. Ki-Ryong
;                  MOON, Jae-Woong
;                  BAE, Cheon-Soon
;                  YANG, Doo-Suk
;                  LEE, Jee-Won
;                  SEONG, Baik-Lin
;       TITLE OF INVENTION: Process for preparing recombinant proteins using highly
;                           efficient expression vector from Sacharomyces cerevisiae
;       NUMBER OF SEQUENCES: 25
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: BACHMAN & LAPOINTE, P.C.
;            STREET: Suite 1201, 900 Chapel Street
;            CITY: New Haven
;            STATE: Connecticut
;            COUNTRY: U.S.A.
;            ZIP: 06510-2802
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Diskette, 3.5 inch, 1.44 Mb storage
;            COMPUTER: IBM
;            OPERATING SYSTEM: WINDOWS 95/98
;            SOFTWARE: MS WORD
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/424,620B
;            FILING DATE: 24-No. 6391585-1999
;   INFORMATION FOR SEQ ID NO: 25:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 241 amino acids
;            TYPE: amino acid
;            TOPOLOGY: linear
;       MOLECULE TYPE: PROTEIN
;       SEQUENCE DESCRIPTION: SEQ ID NO: 25:
US-09-424-620B-25

  Query Match             97.9%;  Score 460;  DB 3;  Length 241;
  Best Local Similarity   98.9%;  Pred. No. 1.5e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db         51 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 110

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db        111 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 141


RESULT 14
US-09-280-030-66
; Sequence 66, Application US/09280030A
; Patent No. 6506595
; GENERAL INFORMATION:
;  APPLICANT: Sato, Seiji
;  APPLICANT: Higashikuni, Naohiko
;  APPLICANT: Kudo, Toshiyuki
;  APPLICANT: Kondo, Masaaki
;  TITLE OF INVENTION: DNAS ENCODING NEW FUSION PROTEINS AND PROCESSES FOR
;  TITLE OF INVENTION: PREPARING USEFUL POLYPEPTIDES THROUGH EXPRESSION OF THE
;  TITLE OF INVENTION: DNAS
;  FILE REFERENCE: 382.1026
;  CURRENT APPLICATION NUMBER: US/09/280,030A
;  CURRENT FILING DATE: 1999-03-26
;  EARLIER APPLICATION NUMBER: JP10-87339/1998
;  EARLIER FILING DATE: 1998-03-31
;  NUMBER OF SEQ ID NOS: 66
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 66
;   LENGTH: 245
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Designated is
;   OTHER INFORMATION: an amino acid sequence of MWPsp-MWPmp20-TEV-G-GH
US-09-280-030-66

  Query Match             97.9%;  Score 460;  DB 4;  Length 245;
  Best Local Similarity   98.9%;  Pred. No. 1.5e-50;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db         55 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 114

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db        115 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 145


RESULT 15
US-08-784-582-71
; Sequence 71, Application US/08784582
; Patent No. 6110707
;  GENERAL INFORMATION:
;    APPLICANT:  Newgard, Christopher B.
;    APPLICANT:  Halban, Philippe A.
;    APPLICANT:  No. 6110707mington, Karl D.
;    APPLICANT:  Clark, Samuel A.
;    APPLICANT:  Thigpen, Anice E.
;    APPLICANT:  Quaade, Christian
;    APPLICANT:  Kruse, Fred
;    APPLICANT:  McGarry, Dennis
;    TITLE OF INVENTION:  RECOMBINANT EXPRESSION OF PROTEINS FROM
;    TITLE OF INVENTION:  SECRETORY CELL LINES
;    NUMBER OF SEQUENCES:  79
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  USA
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/784,582
;      FILING DATE:  Concurrently Herewith
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 60/028,427
;      FILING DATE:  15-OCT-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/589,028
;      FILING DATE:  19-JAN-1996
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Highlander, Steven L.
;      REGISTRATION NUMBER:  37,642
;      REFERENCE/DOCKET NUMBER:  UTSD:514
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  512/418-3000
;      TELEFAX:  512/474-7577
;  INFORMATION FOR SEQ ID NO:  71:
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; SEQUENCE CHARACTERISTICS:
; LENGTH: 274 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
US-08-784-582-71

Query Match 97.9%; Score 460; DB 3; Length 274;
Best Local Similarity 98.9%; Pred. No. 1.7e-50;
Matches 90; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117
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Job time : 22.4059 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 19:59:41 ; Search time 16.9742 Seconds
(without alignments)
521.495 Million cell updates/sec

Title: US-10-054-873-2
Perfect score: 470
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....NLELLRISLLLIQSWLEPVQ 92

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	460	97.9	217	1	STHU	somatotropin 1 pre
2	460	97.9	217	2	I67410	somatotropin - rhe
3	422	89.8	217	1	STHUV	somatotropin 2 pre
4	422	89.8	256	1	STHUV2	somatotropin 2 pre
5	402	85.5	217	2	I67411	somatotropin - rhe
6	397	84.5	217	2	I67409	chorionic somatoma
7	396	84.3	212	2	I67408	chorionic somatoma
8	396	84.3	217	2	I53267	chorionic somatoma
9	381	81.1	217	1	LCHUC	choriomammotropin
10	381	81.1	217	2	E32435	choriomammotropin
11	359.5	76.5	215	2	A26449	choriomammotropin
12	310.5	66.1	216	2	B49159	somatotropin - gol
13	307.5	65.4	190	2	PN0140	somatotropin - sei
14	304.5	64.8	216	1	STMS	somatotropin precu
15	302.5	64.4	190	1	STHO	somatotropin - hor
16	302.5	64.4	216	1	STRT	somatotropin precu
17	302.5	64.4	216	2	S49483	somatotropin precu
18	301.5	64.1	190	2	JK0219	somatotropin - Afr
19	301.5	64.1	216	1	STPG	somatotropin precu
20	301.5	64.1	216	2	I46145	somatotropin precu
21	301.5	64.1	216	2	JC4632	somatotropin precu
22	299.5	63.7	216	2	A37782	somatotropin precu
23	297.5	63.3	190	1	A61584	somatotropin - alp
24	295.5	62.9	190	2	JS0429	somatotropin - Arc
25	289.5	61.6	217	1	STBO	somatotropin precu
26	289.5	61.6	217	1	STGT	somatotropin precu
27	289.5	61.6	217	1	STSH	somatotropin precu
28	289.5	61.6	217	2	S32682	somatotropin - dom
29	278.5	59.3	216	2	JC1514	somatotropin precu
30	275.5	58.6	216	2	A60509	somatotropin precu
31	268.5	57.1	191	2	A60625	somatotropin - gre
32	261	55.5	216	2	S04929	somatotropin precu
33	257.5	54.8	190	2	S21750	somatotropin - Rus
34	247.5	52.7	190	2	A56816	somatotropin - bul
35	238.5	50.7	215	2	I51188	somatotropin - bul
36	237.5	50.5	215	2	JS0037	somatotropin precu
37	234	49.8	199	2	B32435	choriomammotropin-
38	233.5	49.7	195	2	I51250	somatotropin - bow
39	225.5	48.0	183	2	A60623	somatotropin - blu
40	206	43.8	87	4	I67761	EST/beta-Gal mutan
41	174.5	37.1	209	2	JT0483	somatotropin I pre
42	171	36.4	163	2	JN0387	somatotropin - sei
43	165.5	35.2	190	2	JC5682	somatotropin - com
44	165.5	35.2	210	2	I50763	somatotropin - nob
45	165.5	35.2	210	2	S21915	somatotropin - sil

ALIGNMENTS

RESULT 1
STHU
somatotropin 1 precursor [validated] - human
N;Alternate names: growth hormone 1; hGH-N; pituitary somatotropin
N;Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, shor
C;Species: Homo sapiens (man)
C;Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 09-Jul-2004
C;Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217; A
R;DeNoto, F.M.; Moore, D.D.; Goodman, H.M.
Nucleic Acids Res. 9, 3719-3730, 1981
A;Title: Human growth hormone DNA sequence and mRNA structure: possible alternative sp
A;Reference number: A93731; MUID:82014939; PMID:6269091
A;Accession: A93731
A;Molecule type: DNA
A;Residues: 1-217 <DEN>
A;Cross-references: UNIPROT:P01241; GB:V00520
A;Note: the 20K short form somatotropin lacks residues 58-72 (32-46 in the active horm
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg,
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: A32435
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52549.1; PID:g183149
R;Roskam, W.; Rougeon, F.
Nucleic Acids Res. 7, 305-320, 1979
A;Title: Molecular cloning and nucleotide sequence of the human growth hormone structu
A;Reference number: A93694; MUID:80034477; PMID:386281
A;Accession: A93694
A;Molecule type: mRNA
A;Residues: 1-217 <ROS>
A;Cross-references: GB:V00519
A;Note: 35-Pro was also found
R;Martial, J.A.; Hallewell, R.A.; Baxter, J.D.; Goodman, H.M.
Science 205, 602-607, 1979
A;Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
A;Reference number: A94247; MUID:79203293; PMID:377496
A;Accession: A94247
A;Molecule type: mRNA
A;Residues: 1-217 <MAR>
R;Li, C.H.; Dixon, J.S.; Liu, W.K.
Arch. Biochem. Biophys. 133, 70-91, 1969
A;Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.
A;Reference number: A90048; MUID:69289202; PMID:5810834
A;Contents: annotation
R;Li, C.H.; Dixon, J.S.
Arch. Biochem. Biophys. 146, 233-236, 1971
A;Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone: :
A;Reference number: A90051; MUID:72143935; PMID:5144027
A;Accession: A90051
A;Molecule type: protein

A;Residues: 27-94;96-217 <LIC>
R;Niall, H.D.
Nature New Biol. 230, 90-91, 1971
A;Title: Revised primary structure for human growth hormone.
A;Reference number: A93397; MUID:71139765; PMID:5279046
A;Accession: A93397
A;Molecule type: protein
A;Residues: 27-51 <NIA>
R;Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
A;Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution
A;Reference number: A93778; MUID:71153968; PMID:5279528
A;Accession: A93778
A;Molecule type: protein
A;Residues: 119-120;157-159 <NI2>
R;Niall, H.D.
in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K.,
A;Title: The chemistry of the human lactogenic hormones.
A;Reference number: A94427
A;Contents: annotation; somatotropin revision
R;Bewley, T.A.; Dixon, J.S.; Li, C.H.
Int. J. Pept. Protein Res. 4, 281-287, 1972
A;Title: Sequence comparison of human pituitary growth hormone, human chorionic somatoma
A;Reference number: A91764; MUID:73092028; PMID:4675454
A;Accession: A91764
A;Molecule type: protein
A;Residues: 27-217 <BEW>
R;Lewis, U.J.; Bonewald, L.F.; Lewis, L.J.
Biochem. Biophys. Res. Commun. 92, 511-516, 1980
A;Title: The 20,000-dalton variant of human growth hormone: location of the amino acid d
A;Reference number: A90217; MUID:80130196; PMID:7356479
A;Contents: somatotropin, 20K short variant
A;Accession: A90217
A;Molecule type: protein
A;Residues: 46-57;73-80 <LEW>
R;Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.; Ca
J. Biol. Chem. 256, 2395-2401, 1981
A;Title: The 20,000 molecular weight variant of human growth hormone. Preparation and sc
A;Reference number: A92311; MUID:81117361; PMID:7462247
A;Contents: somatotropin, 20K short variant
A;Accession: A92311
A;Molecule type: protein
A;Residues: 27-57;73-79 <CHA>
R;Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
J. Protein Chem. 2, 425-436, 1983
A;Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
A;Reference number: A61466
A;Accession: A61466
A;Molecule type: protein
A;Residues: 27-69 <SIN>
A;Note: growth hormone 5K peptide has insulin potentiating activity; its physiological p
R;Robson, V.M.J.; Rae, I.D.; NG, F.
Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
A;Title: Identification of the aspartimide structure in a previously-reported peptide.
A;Reference number: S09685; MUID:90334745; PMID:2378679
A;Accession: S09685
A;Molecule type: protein
A;Residues: 27-34,'L',36-47 <ROB>
R;de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.
Science 255, 306-312, 1992
A;Title: Human growth hormone and extracellular domain of its receptor: crystal structur
A;Reference number: A41728; MUID:92196577; PMID:1549776
A;Contents: annotation; X-ray crystallography, 2.8 angstroms
A;Note: the structure of the complex with growth hormone receptor is described
R;Gray, G.L.; Baldridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
Gene 39, 247-254, 1985
A;Title: Periplasmic production of correctly processed human growth hormone in Escherich
A;Reference number: I41126; MUID:86137393; PMID:3912261
A;Accession: I84549
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-26 <RES>
A;Cross-references: GB:M14398; NID:g183158; PIDN:AAA52554.1; PID:g183159
C;Comment: The gene for this hormone is transcribed only in somatotrophic cells of the
C;Comment: About 90% of somatotropin is the 22K long form.
C;Genetics:
A;Gene: GDB:GH1
A;Cross-references: GDB:119982; OMIM:139250
A;Map position: 17q23.1-17q23.3
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: alternative splicing; hormone; pituitary
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-217/Product: somatotropin 1, long form #status experimental <SOL>
F;27-69/Product: growth hormone 5K peptide #status experimental <5KP>
F;27-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>
F;79-191,208-215/Disulfide bonds: #status experimental

Query Match 97.9%; Score 460; DB 1; Length 217;
Best Local Similarity 98.9%; Pred. No. 9.1e-42;
Matches 90; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117
```

RESULT 2
I67410
somatotropin - rhesus macaque
N;Alternate names: growth hormone
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004
C;Accession: I67410; A05094
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementa
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67410
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: UNIPROT:P33093; GB:L16556; NID:g293114; PIDN:AAA18842.1; PID:g29311
R;Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.
Arch. Biochem. Biophys. 245, 287-291, 1986
A;Title: The primary structure of monkey pituitary growth hormone.
A;Reference number: A05094; MUID:86129460; PMID:3080959
A;Accession: A05094
A;Molecule type: protein
A;Residues: 27-99,'Q',101-178,'D',180-217 <LIC>
A;Note: the monkey species is not identified in the reference
R;Raben, M.S.
Science 125, 883-884, 1957
A;Title: Preparation of growth hormone from pituitaries of man and monkey.
A;Reference number: A44774
A;Contents: annotation; identification of source organism
C;Superfamily: prolactin

Query Match 97.9%; Score 460; DB 2; Length 217;
Best Local Similarity 98.9%; Pred. No. 9.1e-42;
Matches 90; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117
```

RESULT 3

STHUV
somatotropin 2 precursor - human
N;Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotrop
N;Contains: somatotropin 2, long splice form; somatotropin 2, short splice form
C;Species: Homo sapiens (man)
C;Date: 17-Dec-1982 #sequence_revision 10-Feb-1995 #text_change 09-Jul-2004
C;Accession: D32435; B28072; A01511; I52104; A60711
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: D32435
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: UNIPROT:P01242; GB:J03071; NID:g183148; PIDN:AAA52552.1; PID:g183152
R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.
J. Biol. Chem. 263, 9001-9006, 1988
A;Title: Two distinct species of human growth hormone-variant mRNA in the human placenta
A;Reference number: A92725; MUID:88243769; PMID:3379057
A;Accession: B28072
A;Molecule type: mRNA
A;Residues: 1-217 <COO>
R;Seeburg, P.H.
DNA 1, 239-249, 1982
A;Title: The human growth hormone gene family: nucleotide sequences show recent divergen
A;Reference number: A01511; MUID:83182010; PMID:7169009
A;Accession: A01511
A;Molecule type: DNA
A;Residues: 1-34,'P',36-217 <SEE>
R;Igout, A.; Scippo, M.L.; Frankenne, F.; Hennen, G.
Arch. Int. Physiol. Biochim. 96, 63-67, 1988
A;Title: Cloning and nucleotide sequence of placental hGH-V cDNA.
A;Reference number: I52104; MUID:89024984; PMID:2460050
A;Accession: I52104
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <IGO>
A;Cross-references: GB:M38451; NID:g183179; PIDN:AAA35891.1; PID:g183180
R;Frankenne, F.; Scippo, M.L.; Van Beeumen, J.; Igout, A.; Hennen, G.
J. Clin. Endocrinol. Metab. 71, 15-18, 1990
A;Title: Identification of placental human growth hormone as the growth hormone-V gene e
A;Reference number: A60711; MUID:90317018; PMID:2196278
A;Accession: A60711
A;Molecule type: protein
A;Residues: 27-44;46-57 <FRA>
A;Experimental source: tissue placenta
A;Note: partial glycosylation was demonstrated by lectin binding
C;Comment: This gene is expressed by the placenta.
C;Genetics:
A;Gene: GDB:GH2
A;Cross-references: GDB:119983; OMIM:139240
A;Map position: 17q22-17q24
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: alternative splicing; glycoprotein; hormone; placenta
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-217/Product: somatotropin 2, long splice form #status predicted <SOL>
F;27-57,73-217/Product: somatotropin 2, short splice form #status predicted <SOS>
F;79-191,208-215/Disulfide bonds: #status predicted
F;166/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 89.8%; Score 422; DB 1; Length 217;
Best Local Similarity 92.3%; Pred. No. 1e-37;
Matches 84; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||| ||:|||:|||||||||||| |||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||| :|||||||||||||||||||||||||
Db         87 PSNRVKTQQKSNLELLRISLLLIQSWLEPVQ 117
```

RESULT 4
STHUV2
somatotropin 2 precursor, splice form 2 - human
N;Alternate names: growth hormone variant-2; placental somatotropin form 2
C;Species: Homo sapiens (man)
C;Date: 30-Sep-1989 #sequence_revision 10-Feb-1995 #text_change 09-Jul-2004
C;Accession: A28072
R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.
J. Biol. Chem. 263, 9001-9006, 1988
A;Title: Two distinct species of human growth hormone-variant mRNA in the human placer
A;Reference number: A92725; MUID:88243769; PMID:3379057
A;Accession: A28072
A;Molecule type: mRNA
A;Residues: 1-256 <COO>
A;Cross-references: UNIPROT:P01242
A;Note: an alternative splice junction for intron 4 is used
C;Genetics:
A;Gene: GDB:GH2
A;Cross-references: GDB:119983; OMIM:139240
A;Map position: 17q22-17q24
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: alternative splicing; hormone; placenta
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-256/Product: somatotropin 2 splice form 2 #status predicted <MAT>

Query Match 89.8%; Score 422; DB 1; Length 256;
Best Local Similarity 92.3%; Pred. No. 1.3e-37;
Matches 84; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||| ||:|||:|||||||||||| |||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||| :|||||||||||||||||||||||||
Db         87 PSNRVKTQQKSNLELLRISLLLIQSWLEPVQ 117
```

RESULT 5
I67411
somatotropin - rhesus macaque
N;Alternate names: growth hormone
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004
C;Accession: I67411
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complement
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67411
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: UNIPROT:Q07370; GB:L16555; NID:g293116; PIDN:AAA20180.1; PID:g2931
C;Superfamily: prolactin

Query Match 85.5%; Score 402; DB 2; Length 217;
Best Local Similarity 85.7%; Pred. No. 1.4e-35;
Matches 78; Conservative 6; Mismatches 7; Indels 0; Gaps 0;

```
Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              ||||||| ||: |: ||| ||:|||||| :|||||||||||||||:|||||| |||||||
Db         27 FPTIPLSWLFNTAVFRAHHLHKLAFDTYPKFEEAYIPKEQKYSFLRNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||:|||||||||||| ||||||||||||||
Db         87 PSNKEETQQKSNLELLHISLLLIQSWLEPVQ 117
```

RESULT 6
I67409

```
chorionic somatomammotropin-3 - rhesus macaque
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004
C;Accession: I67409
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67409
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: UNIPROT:Q07369; GB:L16554; NID:g293112; PIDN:AAA18841.1; PID:g293113
C;Superfamily: prolactin

  Query Match             84.5%;  Score 397;  DB 2;  Length 217;
  Best Local Similarity   83.3%;  Pred. No. 4.9e-35;
  Matches   75;  Conservative    8;  Mismatches    7;  Indels    0;  Gaps    0;

Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTP 62
              |::|||||||| |::|||||||||||||||||: ||||||:|:| : ||| |  |||||||
Db         28 PSVPLSRLFDNIMMQAHRLHQLAFDTYQEFEKTYIPKEKKHSLMGNPQASFCFSESIPTP 87

Qy         63 SNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||
Db         88 SNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 7
I67408
chorionic somatomammotropin-2 - rhesus macaque (fragment)
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004
C;Accession: I67408
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67408
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-212 <RES>
A;Cross-references: UNIPROT:Q07368; GB:L16553; NID:g293110; PIDN:AAA18840.1; PID:g293111
C;Superfamily: prolactin

  Query Match             84.3%;  Score 396;  DB 2;  Length 212;
  Best Local Similarity   82.2%;  Pred. No. 6.1e-35;
  Matches   74;  Conservative   11;  Mismatches    5;  Indels    0;  Gaps    0;

Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTP 62
              |::|||||||:||::|||||||||||||||||||||:|:| ::||| |  |::|||||
Db         23 PSVPLSRLFDHAMIQAHRLHQLAFDTYQEFEEAYIPKEKKHSLMENPQASFCFADSIPTP 82

Qy         63 SNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              || |||||||||||||||||||||||||||
Db         83 SNLEETQQKSNLELLRISLLLIQSWLEPVQ 112


RESULT 8
I53267
chorionic somatomammotropin-1 - rhesus macaque
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004
C;Accession: I53267
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I53267
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: UNIPROT:Q07367; GB:L16552; NID:g293108; PIDN:AAA18839.1; PID:g293109
C;Superfamily: prolactin

  Query Match             84.3%;  Score 396;  DB 2;  Length 217;
  Best Local Similarity   82.2%;  Pred. No. 6.3e-35;
  Matches   74;  Conservative   11;  Mismatches    5;  Indels    0;  Gaps    0;

Qy          3 PTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTP 62
              |::|||||||:||::|||||||||||||||||||||:|:| ::||| |  |::|||||
Db         28 PSVPLSRLFDHAMIQAHRLHQLAFDTYQEFEEAYIPKEKKHSLMENPQASFCFADSIPTP 87

Qy         63 SNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              || |||||||||||||||||||||||||||
Db         88 SNLEETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 9
LCHUC
choriomammotropin A precursor [validated] - human
N;Alternate names: chorionic somatomammotropin 1; placental lactogen
C;Species: Homo sapiens (man)
C;Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 09-Jul-2004
C;Accession: C32435; A94422; I52342; A93833; A93192; A90054; A94427; A61283; I55229; I5
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: C32435
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: UNIPROT:P01243; GB:J03071; NID:g183148; PIDN:AAA52551.1; PID:g18315
R;Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Hallewell, R.A.; Page, G.S.; Smith, S.; Tisc
in Mobilization and Reassembly of Genetic Information, Scott, W.A., Werner, R., Joseph,
A;Reference number: A94422
A;Accession: A94422
A;Molecule type: mRNA
A;Residues: 1-217 <GOO>
R;Tanaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashima
Biochem. Int. 16, 287-292, 1988
A;Title: cDNA cloning of human chorionic somatomammotropin-1 mRNA whose transcription w
A;Reference number: I52342; MUID:88209096; PMID:2835050
A;Accession: I52342
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-3 <TAN>
A;Cross-references: GB:M35419; NID:g506822
R;Sherwood, L.M.; Burstein, Y.; Schechter, I.
Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979
A;Title: Primary structure of the NH-2-terminal extra piece of the precursor to human p
A;Reference number: A93833; MUID:80034970; PMID:291043
A;Accession: A93833
A;Molecule type: protein
A;Residues: 1,3-26 <SHE>
A;Experimental source: placenta
R;Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.
Nature 270, 494-499, 1977
A;Title: Construction and analysis of recombinant DNA for human chorionic somatomammot
A;Reference number: A93192; MUID:78071761; PMID:593368
A;Accession: A93192
A;Molecule type: DNA
A;Residues: 50-217 <SHI>
A;Experimental source: placenta
R;Li, C.H.; Dixon, J.S.; Chung, D.
Arch. Biochem. Biophys. 155, 95-110, 1973
A;Title: Amino acid sequence of human chorionic somatomammotropin.
A;Reference number: A90054; MUID:73201971; PMID:4712450
A;Accession: A90054
A;Molecule type: protein
A;Residues: 27-217 <LIC>
A;Experimental source: placenta
R;Niall, H.D.
in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K
A;Title: The chemistry of the human lactogenic hormones.
A;Reference number: A94427
```

A;Accession: A94427
A;Molecule type: protein
A;Residues: 27-217 <NIA>
A;Experimental source: placenta
R;Nic A Bhaird, N.; Tipton, K.F.
Biochem. Soc. Trans. 19, 20S, 1991
A;Title: Catechol-O-methyltransferase from human placenta: purification and some propert
A;Reference number: A61283; MUID:91244006; PMID:2037148
A;Accession: A61283
A;Molecule type: protein
A;Residues: 27-46 <NIC>
A;Note: choriomammotropin apparently copurified with placental catechol-O-methyltransfer
R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 233, 59-61, 1971
A;Title: Amino-acid sequence of human placental lactogen.
A;Reference number: A93401; MUID:72016313; PMID:5286363
A;Contents: annotation
R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 235, 64, 1972
A;Reference number: A93405
A;Contents: annotation
R;Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.
J. Biol. Chem. 254, 3782-3787, 1979
A;Title: Identification of the interchain disulfide bonds of dimeric human placental lac
A;Reference number: A92251; MUID:79173081; PMID:438159
A;Contents: annotation; dimeric disulfide bonds
R;Selby, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.
J. Biol. Chem. 259, 13131-13138, 1984
A;Title: Analysis of a major human chorionic somatomammotropin gene. Evidence for two fu
A;Reference number: I55229; MUID:85030426; PMID:6208192
A;Accession: I55229
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:K02401; NID:g181120; PIDN:AAA52115.1; PID:g181121
R;Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H.
Trans. Assoc. Am. Physicians 90, 109-116, 1977
A;Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.
A;Reference number: I59658; MUID:78160787; PMID:611657
A;Accession: I59658
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 160-217 <RE2>
A;Cross-references: GB:M25118; NID:g181124; PIDN:AAA35721.1; PID:g181125
C;Genetics:
A;Gene: GDB:CSH1
A;Cross-references: GDB:119084; OMIM:150200
A;Map position: 17q22-17q24
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: hormone; placenta
F;1-26/Domain: signal sequence #status experimental <SIG>
F;27-217/Product: choriomammotropin A #status experimental <MAT>
F;79-191/Disulfide bonds: #status experimental
F;208-215/Disulfide bonds: (in monomeric form) #status experimental
F;208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
F;215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

Query Match 81.1%; Score 381; DB 1; Length 217;
Best Local Similarity 82.0%; Pred. No. 2.5e-33;
Matches 73; Conservative 8; Mismatches 8; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88

Qy 64 NREETQQKSNLELLRISLLLIQSWLEPVQ 92
Db 89 NMEETQQKSNLELLRISLLLIESWLEPVR 117

RESULT 10
E32435
choriomammotropin B precursor - human
N;Alternate names: chorionic somatomammotropin 2
C;Species: Homo sapiens (man)
C;Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 09-Jul-2004
C;Accession: E32435
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg,
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: E32435
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: UNIPROT:Q14407; GB:J03071; NID:g183148; PIDN:AAA52553.1; PID:g1831
C;Genetics:
A;Gene: GDB:CSH2
A;Cross-references: GDB:119813; OMIM:118820
A;Map position: 17q22-17q24
C;Superfamily: prolactin

Query Match 81.1%; Score 381; DB 2; Length 217;
Best Local Similarity 82.0%; Pred. No. 2.5e-33;
Matches 73; Conservative 8; Mismatches 8; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88

Qy 64 NREETQQKSNLELLRISLLLIQSWLEPVQ 92
Db 89 NMEETQQKSNLELLRISLLLIESWLEPVR 117

RESULT 11
A26449
choriomammotropin precursor (allele hCS-3) - human
C;Species: Homo sapiens (man)
C;Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: A26449
R;Hirt, H.; Kimelman, J.; Birnbaum, M.J.; Chen, E.Y.; Seeburg, P.H.; Eberhardt, N.L.; I
DNA 6, 59-70, 1987
A;Title: The human growth hormone gene locus: structure, evolution, and allelic variati
A;Reference number: A26449; MUID:87161235; PMID:3030680
A;Accession: A26449
A;Molecule type: DNA
A;Residues: 1-215 <HIR>
A;Cross-references: UNIPROT:P01243
C;Superfamily: prolactin
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-215/Product: choriomammotropin, hCS-3 allele #status predicted <MAT>

Query Match 76.5%; Score 359.5; DB 2; Length 215;
Best Local Similarity 80.5%; Pred. No. 5e-31;
Matches 70; Conservative 8; Mismatches 8; Indels 1; Gaps 1;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88

Qy 64 NREETQQKSNLELLRISLLLIQSWLEP 90
Db 89 NMEETQQKSNLELLRL-LLLIESWLEP 114

RESULT 12
B49159
somatotropin - golden hamster
N;Alternate names: growth hormone
C;Species: Mesocricetus auratus (golden hamster)
C;Date: 19-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Accession: B49159
R;Southard, J.N.; Sanchez-Jimenez, F.; Campbell, G.T.; Talamantes, F.
Endocrinology 129, 2965-2971, 1991

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A;Title: Sequence and expression of hamster prolactin and growth hormone messenger RNAs.
A;Reference number: A49159; MUID:92063850; PMID:1954881
A;Accession: B49159
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-216 <SOU>
A;Cross-references: UNIPROT:P37886; GB:S66299; NID:g239355; PIDN:AAB20368.1; PID:g239356
A;Note: sequence extracted from NCBI backbone (NCBIN:66299, NCBIP:66300)
C;Superfamily: prolactin

  Query Match             66.1%;  Score 310.5;  DB 2;  Length 216;
  Best Local Similarity   67.0%;  Pred. No. 8.7e-26;
  Matches   61;  Conservative   13;  Mismatches   16;  Indels    1;  Gaps    1;

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Db         27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQNAQTAFCFSETIPA 85

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |: :|| ||:|::|||| |||||||| |||
Db         86 PTGKEEAQQRSDMELLRFSLLLIQSWLGPVQ 116


RESULT 13
PN0140
somatotropin - sei whale
N;Alternate names: growth hormone
C;Species: Balaenoptera borealis (sei whale)
C;Date: 07-May-1993 #sequence_revision 07-May-1993 #text_change 09-Jul-2004
C;Accession: PN0140
R;Yudaev, N.A.; Pankov, Y.A.; Bulatov, A.A.; Osipova, T.A.
Biokhimiia 47, 1059-1069, 1982
A;Title: Amino acid sequence of seiwhale somatotropin.
A;Reference number: PN0140; MUID:83000569; PMID:7115813
A;Accession: PN0140
A;Molecule type: protein
A;Residues: 1-190 <YUD>
A;Cross-references: UNIPROT:P33092
A;Note: article in Russian with English abstract
C;Superfamily: prolactin
C;Keywords: growth factor; hormone
F;52-163,180-188/Disulfide bonds: #status predicted

  Query Match             65.4%;  Score 307.5;  DB 2;  Length 190;
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              || :||| || ||:||| ||:|| ||| |||| |:| |||| |::  ||| |||
Db          1 FPAMPLSSLFANAVLRAQHLHELAADTYKEFERAYIPEGQRY-FLQNAQSTGCFSEVIPT 59

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |:|::| ||:|::|||| |||||||| |||
Db         60 PANKDEAQQRSDVELLRFSLLLIQSWLGPVQ 90


RESULT 14
STMS
somatotropin precursor - mouse
N;Alternate names: growth hormone
C;Species: Mus musculus (house mouse)
C;Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 09-Jul-2004
C;Accession: B23911
R;Linzer, D.I.H.; Talamantes, F.
J. Biol. Chem. 260, 9574-9579, 1985
A;Title: Nucleotide sequence of mouse prolactin and growth hormone mRNAs and expression
A;Reference number: A92548; MUID:85261358; PMID:2991252
A;Accession: B23911
A;Molecule type: mRNA
A;Residues: 1-216 <LIN>
A;Cross-references: UNIPROT:P06880; GB:X02891; GB:K03232; NID:g51067; PIDN:CAA26650.1; P
C;Superfamily: prolactin
C;Keywords: anterior pituitary; growth factor; hormone
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-216/Product: somatotropin #status predicted <STN>
F;78-189,206-214/Disulfide bonds: #status predicted

  Query Match             64.8%;  Score 304.5;  DB 1;  Length 216;
  Best Local Similarity   64.8%;  Pred. No. 3.8e-25;
  Matches   59;  Conservative   14;  Mismatches   17;  Indels    1;  Gaps    1;

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Db         27 FPAMPLSSLFSNAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQNAQAAFCFSETIPA 85

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |: :|| ||:::|||| |||||||| |||
Db         86 PTGKEEAQQRTDMELLRFSLLLIQSWLGPVQ 116


RESULT 15
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somatotropin - horse
N;Alternate names: growth hormone
C;Species: Equus caballus (domestic horse)
C;Date: 13-Jul-1981 #sequence_revision 13-Jul-1981 #text_change 23-Aug-1996
C;Accession: A91772; A91395; A91383; A90240; A01514
R;Zakin, M.M.; Poskus, E.; Langton, A.A.; Ferrara, P.; Santome, J.A.; Dellacha, J.M.; Pa
Int. J. Pept. Protein Res. 8, 435-444, 1976
A;Title: Primary structure of equine growth hormone.
A;Reference number: A91772; MUID:77005410; PMID:965151
A;Accession: A91772
A;Molecule type: protein
A;Residues: 1-190 <ZAK>
R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
FEBS Lett. 34, 353-355, 1973
A;Title: The amino acid sequence of equine growth hormone.
A;Reference number: A91395; MUID:74020362; PMID:4747849
A;Accession: A91395
A;Molecule type: protein
A;Residues: 1-190 <ZA2>
R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
FEBS Lett. 25, 77-82, 1972
A;Title: Amino acid sequences around the cystine residues in equine growth hormone.
A;Reference number: A91383
A;Accession: A91383
A;Molecule type: protein
A;Residues: 42-69;157-190 <ZA3>
R;Oliver, L.; Hartree, A.S.
Biochem. J. 109, 19-24, 1968
A;Title: Amino acid sequences around the cystine residues in horse growth hormone.
A;Reference number: A90240; MUID:68368390; PMID:4876100
A;Accession: A90240
A;Molecule type: protein
A;Residues: 176-190 <OLI>
C;Superfamily: prolactin
C;Keywords: hormone; pituitary
F;52-163,180-188/Disulfide bonds: #status experimental

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              || :||| || ||:||| |||| ||| :||| |||| |:|| :|| | :  |||:||
Db          1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQNAQAAFCFSETIPA 59

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |: ::| ||:|::|||| |||||||| |||
Db         60 PTGKDEAQQRSDMELLRFSLLLIQSWLGPVQ 90


Search completed: November  2, 2004, 20:22:13
Job time : 16.9742 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 20:20:47 ; Search time 68.9151 Seconds
(without alignments)
432.820 Million cell updates/sec

Title: US-10-054-873-2
Perfect score: 470
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....NLELLRISLLLIQSWLEPVQ 92

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1370721 seqs, 324215800 residues

Total number of hits satisfying chosen parameters: 1370721

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published_Applications_AA:*
1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
5: /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
6: /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	470	100.0	92	13	US-10-054-873-2	Sequence 2, Appli
2	470	100.0	134	10	US-09-819-094-24	Sequence 24, Appl
3	470	100.0	134	15	US-10-714-067-24	Sequence 24, Appl
4	470	100.0	150	13	US-10-054-873-7	Sequence 7, Appli
5	465	98.9	188	15	US-10-621-693-18	Sequence 18, Appl
6	465	98.9	192	10	US-09-819-094-23	Sequence 23, Appl
7	465	98.9	192	15	US-10-621-693-8	Sequence 8, Appli
8	465	98.9	192	15	US-10-621-693-78	Sequence 78, Appl
9	465	98.9	192	15	US-10-621-693-86	Sequence 86, Appl
10	465	98.9	192	15	US-10-714-067-23	Sequence 23, Appl
11	465	98.9	193	15	US-10-621-693-42	Sequence 42, Appl
12	465	98.9	206	15	US-10-621-693-72	Sequence 72, Appl
13	465	98.9	391	15	US-10-621-693-51	Sequence 51, Appl
14	465	98.9	574	15	US-10-621-693-32	Sequence 32, Appl
15	465	98.9	576	15	US-10-621-693-39	Sequence 39, Appl
16	465	98.9	589	15	US-10-621-693-53	Sequence 53, Appl
17	465	98.9	786	15	US-10-621-693-55	Sequence 55, Appl
18	465	98.9	810	15	US-10-621-693-76	Sequence 76, Appl
19	460	97.9	191	10	US-09-984-010-23	Sequence 23, Appl
20	460	97.9	191	14	US-10-153-207-1	Sequence 1, Appli
21	460	97.9	191	14	US-10-400-377-1	Sequence 1, Appli
22	460	97.9	191	14	US-10-400-708-1	Sequence 1, Appli
23	460	97.9	191	14	US-10-298-148-1	Sequence 1, Appli
24	460	97.9	191	15	US-10-646-798-2	Sequence 2, Appli
25	460	97.9	191	15	US-10-621-693-2	Sequence 2, Appli
26	460	97.9	191	15	US-10-621-693-21	Sequence 21, Appl
27	460	97.9	191	15	US-10-621-693-80	Sequence 80, Appl
28	460	97.9	191	15	US-10-621-693-82	Sequence 82, Appl
29	460	97.9	191	15	US-10-621-693-84	Sequence 84, Appl
30	460	97.9	191	16	US-10-718-340-1	Sequence 1, Appli
31	460	97.9	191	16	US-10-658-834A-866	Sequence 866, App
32	460	97.9	191	16	US-10-658-834A-867	Sequence 867, App
33	460	97.9	191	16	US-10-658-834A-868	Sequence 868, App
34	460	97.9	191	16	US-10-658-834A-869	Sequence 869, App
35	460	97.9	191	16	US-10-658-834A-870	Sequence 870, App
36	460	97.9	191	16	US-10-658-834A-871	Sequence 871, App
37	460	97.9	191	16	US-10-658-834A-872	Sequence 872, App
38	460	97.9	191	16	US-10-658-834A-873	Sequence 873, App
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41	460	97.9	191	16	US-10-658-834A-876	Sequence 876, App
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43	460	97.9	191	16	US-10-658-834A-878	Sequence 878, App
44	460	97.9	191	16	US-10-658-834A-879	Sequence 879, App
45	460	97.9	191	16	US-10-658-834A-880	Sequence 880, App

ALIGNMENTS

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RESULT 1
US-10-054-873-2
; Sequence 2, Application US/10054873
; Publication No. US20020164712A1
;  GENERAL INFORMATION:
;       APPLICANT: Gan, Zhong Ru
;       TITLE OF INVENTION: Chimeric Protein Containing an
;                           Intramolecular Chaperone-Like Sequence
;       NUMBER OF SEQUENCES: 7
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Townsend and Townsend and Crew LLP
;            STREET: Two Embarcadero Center, Eighth Floor
;            CITY: San Francisco
;            STATE: California
;            COUNTRY: USA
;            ZIP: 94111-3834
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/10/054,873
;            FILING DATE: 22-Jan-2002
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: WO PCT/CN98/00052
;            FILING DATE: 31-MAR-1998
;            APPLICATION NUMBER: US 09/423,100
;            FILING DATE: 11-DEC-2000
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Mycroft, Frank J
;            REGISTRATION NUMBER: 46,946
;            REFERENCE/DOCKET NUMBER: 020167-000130US
;  INFORMATION FOR SEQ ID NO: 2:
;       SEQUENCE CHARACTERISTICS:
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;           LENGTH: 92 amino acids
;           TYPE: amino acid
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;           TOPOLOGY: linear
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-10-054-873-2

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RESULT 2
US-09-819-094-24
; Sequence 24, Application US/09819094
; Publication No. US20030186382A1
; GENERAL INFORMATION:
;  APPLICANT: Weiner, Richard I.
;  APPLICANT:  Martial, Joseph A.
;  APPLICANT:  Struman, Ingrid
;  APPLICANT:  Taylor, Robert
;  APPLICANT:  Bentzien, Frauke
;  TITLE OF INVENTION: No. US20030186382A1el Antiangiogenic Peptide Agents and Their
;  TITLE OF INVENTION:  Therapeutic and Diagnostic Use
;  FILE REFERENCE: UCSF-018/02US
;  CURRENT APPLICATION NUMBER: US/09/819,094
;  CURRENT FILING DATE:  2001-03-27
;  PRIOR APPLICATION NUMBER: 09/076,675
;  PRIOR FILING DATE: 1998-05-12
;  PRIOR APPLICATION NUMBER: 60/046,394
;  PRIOR FILING DATE: 1997-05-12
;  NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 24
;   LENGTH: 134
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-819-094-24

  Query Match            100.0%;  Score 470;  DB 10;  Length 134;
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RESULT 3
US-10-714-067-24
; Sequence 24, Application US/10714067
; Publication No. US20040077054A1
; GENERAL INFORMATION:
;  APPLICANT: Weiner, Richard I.
;  APPLICANT:  Martial, Joseph A.
;  APPLICANT:  Struman, Ingrid
;  APPLICANT:  Taylor, Robert
;  APPLICANT:  Bentzien, Frauke
;  TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their
;  TITLE OF INVENTION:  Therapeutic and Diagnostic Use
;  FILE REFERENCE: UCSF-018/02US
;  CURRENT APPLICATION NUMBER: US/10/714,067
;  CURRENT FILING DATE:  2003-11-14
;  PRIOR APPLICATION NUMBER: US/09/819,094
;  PRIOR FILING DATE: 2001-03-27
;  PRIOR APPLICATION NUMBER: 09/076,675
;  PRIOR FILING DATE: 1998-05-12
;  PRIOR APPLICATION NUMBER: 60/046,394
;  PRIOR FILING DATE: 1997-05-12
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;   LENGTH: 134
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-714-067-24

  Query Match            100.0%;  Score 470;  DB 15;  Length 134;
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RESULT 4
US-10-054-873-7
; Sequence 7, Application US/10054873
; Publication No. US20020164712A1
;  GENERAL INFORMATION:
;       APPLICANT: Gan, Zhong Ru
;       TITLE OF INVENTION: Chimeric Protein Containing an
;                           Intramolecular Chaperone-Like Sequence
;       NUMBER OF SEQUENCES: 7
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Townsend and Townsend and Crew LLP
;            STREET: Two Embarcadero Center, Eighth Floor
;            CITY: San Francisco
;            STATE: California
;            COUNTRY: USA
;            ZIP: 94111-3834
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/10/054,873
;            FILING DATE: 22-Jan-2002
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: WO PCT/CN98/00052
;            FILING DATE: 31-MAR-1998
;            APPLICATION NUMBER: US 09/423,100
;            FILING DATE: 11-DEC-2000
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Mycroft, Frank J
;            REGISTRATION NUMBER: 46,946
;            REFERENCE/DOCKET NUMBER: 020167-000130US
;  INFORMATION FOR SEQ ID NO: 7:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 150 amino acids
;            TYPE: amino acid
;            STRANDEDNESS: <Unknown>
;            TOPOLOGY: linear
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-10-054-873-7

  Query Match            100.0%;  Score 470;  DB 13;  Length 150;
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Best Local Similarity 100.0%; Pred. No. 2.2e-44;
Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
```

RESULT 5
US-10-621-693-18
; Sequence 18, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 18
; LENGTH: 188
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-18

Query Match 98.9%; Score 465; DB 15; Length 188;
Best Local Similarity 98.9%; Pred. No. 1.1e-43;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
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RESULT 6
US-09-819-094-23
; Sequence 23, Application US/09819094
; Publication No. US20030186382A1
; GENERAL INFORMATION:
; APPLICANT: Weiner, Richard I.
; APPLICANT: Martial, Joseph A.
; APPLICANT: Struman, Ingrid
; APPLICANT: Taylor, Robert
; APPLICANT: Bentzien, Frauke
; TITLE OF INVENTION: No. US20030186382A1el Antiangiogenic Peptide Agents and Their
; TITLE OF INVENTION: Therapeutic and Diagnostic Use
; FILE REFERENCE: UCSF-018/02US
; CURRENT APPLICATION NUMBER: US/09/819,094
; CURRENT FILING DATE: 2001-03-27
; PRIOR APPLICATION NUMBER: 09/076,675
; PRIOR FILING DATE: 1998-05-12
; PRIOR APPLICATION NUMBER: 60/046,394
; PRIOR FILING DATE: 1997-05-12
; NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 23
; LENGTH: 192
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-819-094-23

Query Match 98.9%; Score 465; DB 10; Length 192;
Best Local Similarity 98.9%; Pred. No. 1.1e-43;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
```

RESULT 7
US-10-621-693-8
; Sequence 8, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUE
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 8
; LENGTH: 192
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
; FEATURE:
; NAME/KEY: mat_peptide
; LOCATION: (1)..()
US-10-621-693-8

Query Match 98.9%; Score 465; DB 15; Length 192;
Best Local Similarity 98.9%; Pred. No. 1.1e-43;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
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RESULT 8
US-10-621-693-78
; Sequence 78, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUEN
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 78
; LENGTH: 192

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;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
US-10-621-693-78

  Query Match             98.9%;  Score 465;  DB 15;  Length 192;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-43;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 9
US-10-621-693-86
; Sequence 86, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 86
;   LENGTH: 192
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
;   FEATURE:
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (2)..(192)
;   OTHER INFORMATION: sequence is repeated N+2 times, where N is a positive whole numbe
;   FEATURE:
;   NAME/KEY: mat_peptide
;   LOCATION: (1)..()
US-10-621-693-86

  Query Match             98.9%;  Score 465;  DB 15;  Length 192;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-43;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 10
US-10-714-067-23
; Sequence 23, Application US/10714067
; Publication No. US20040077054A1
; GENERAL INFORMATION:
;  APPLICANT: Weiner, Richard I.
;  APPLICANT:  Martial, Joseph A.
;  APPLICANT:  Struman, Ingrid
;  APPLICANT:  Taylor, Robert
;  APPLICANT:  Bentzien, Frauke
;  TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their
;  TITLE OF INVENTION:  Therapeutic and Diagnostic Use
;  FILE REFERENCE: UCSF-018/02US
;  CURRENT APPLICATION NUMBER: US/10/714,067
;  CURRENT FILING DATE:  2003-11-14
;  PRIOR APPLICATION NUMBER: US/09/819,094
;  PRIOR FILING DATE: 2001-03-27
;  PRIOR APPLICATION NUMBER: 09/076,675
;  PRIOR FILING DATE: 1998-05-12
;  PRIOR APPLICATION NUMBER: 60/046,394
;  PRIOR FILING DATE: 1997-05-12
;  NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 23
;   LENGTH: 192
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-714-067-23

  Query Match             98.9%;  Score 465;  DB 15;  Length 192;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-43;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 11
US-10-621-693-42
; Sequence 42, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUEN
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 42
;   LENGTH: 193
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
US-10-621-693-42

  Query Match             98.9%;  Score 465;  DB 15;  Length 193;
  Best Local Similarity   98.9%;  Pred. No. 1.1e-43;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 12
US-10-621-693-72
; Sequence 72, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
```

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;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 72
;   LENGTH: 206
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
US-10-621-693-72

  Query Match             98.9%;  Score 465;  DB 15;  Length 206;
  Best Local Similarity   98.9%;  Pred. No. 1.2e-43;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 13
US-10-621-693-51
; Sequence 51, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 51
;   LENGTH: 391
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
;   FEATURE:
;   NAME/KEY: mat_peptide
;   LOCATION: (1)..()
US-10-621-693-51

  Query Match             98.9%;  Score 465;  DB 15;  Length 391;
  Best Local Similarity   98.9%;  Pred. No. 2.6e-43;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 14
US-10-621-693-32
; Sequence 32, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUE
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 32
;   LENGTH: 574
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
;   FEATURE:
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (379)..(569)
;   OTHER INFORMATION: sequence is repeated N-1 times, where N is a positive whole numl
;   FEATURE:
;   NAME/KEY: mat_peptide
;   LOCATION: (1)..()
US-10-621-693-32

  Query Match             98.9%;  Score 465;  DB 15;  Length 574;
  Best Local Similarity   98.9%;  Pred. No. 4.3e-43;
  Matches   91;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92


RESULT 15
US-10-621-693-39
; Sequence 39, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
;  APPLICANT: Gentide Biopharmaceuticals, Inc.
;  APPLICANT:  Bussell, Stuart
;  TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUEI
;  TITLE OF INVENTION:  DIRECT FUSIONS OR WITH LINKERS
;  FILE REFERENCE: GNT-00101.P.1-US
;  CURRENT APPLICATION NUMBER: US/10/621,693
;  CURRENT FILING DATE:  2003-07-16
;  PRIOR APPLICATION NUMBER: US 60/396,466
;  PRIOR FILING DATE: 2002-07-16
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 39
;   LENGTH: 576
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic sequence
;   FEATURE:
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (380)..(571)
;   OTHER INFORMATION: sequence is repeated N-1 times, where N is a positive whole numb
;   FEATURE:
;   NAME/KEY: mat_peptide
;   LOCATION: (1)..()
US-10-621-693-39
```

Query Match 98.9%; Score 465; DB 15; Length 576;
Best Local Similarity 98.9%; Pred. No. 4.3e-43;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              ||||||||||||||||||||||||||||||||
Db         61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
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Search completed: November 2, 2004, 20:59:19
Job time : 68.9151 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 19:48:36 ; Search time 89.1144 Seconds
(without alignments)
594.006 Million cell updates/sec

Title: US-10-054-873-2
Perfect score: 470
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....NLELLRISLLLIQSWLEPVQ 92

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : UniProt_02:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	460	97.9	217	1	SOMA_HUMAN	P01241 homo sapien
2	460	97.9	217	1	SOMA_MACMU	P33093 macaca mula
3	460	97.9	217	1	SOMA_PANTR	P58756 pan troglod
4	460	97.9	217	2	Q6IYF0	Q6iyf0 homo sapien
5	460	97.9	217	2	AAT11509	Aat11509 homo sapi
6	456	97.0	217	2	Q6IYF1	Q6iyf1 homo sapien
7	456	97.0	217	2	AAT11508	Aat11508 homo sapi
8	435	92.6	217	2	Q8WNE0	Q8wne0 ateles geof
9	433	92.1	217	1	SOMA_SAIBB	P58343 saimiri bol
10	432	91.9	217	1	SOMA_CALJA	Q9gmb3 callithrix
11	430	91.5	217	1	SOM2_PANTR	P58757 pan troglod
12	423	90.0	217	2	Q6FH54	Q6fh54 homo sapien
13	422	89.8	217	1	SOM2_HUMAN	P01242 homo sapien
14	422	89.8	245	2	O14644	O14644 homo sapien
15	417	88.7	217	2	Q6FH32	Q6fh32 homo sapien
16	399	84.9	184	2	Q866T9	Q866t9 pan troglod
17	397	84.5	217	2	Q07369	Q07369 macaca mula
18	397	84.5	217	2	Q866U1	Q866u1 pan troglod
19	396	84.3	212	2	Q07368	Q07368 macaca mula
20	396	84.3	217	1	SOM2_MACMU	Q07370 macaca mula
21	396	84.3	217	2	Q07367	Q07367 macaca mula
22	385	81.9	217	2	Q866T8	Q866t8 pan troglod
23	381	81.1	217	1	CSH_HUMAN	P01243 homo sapien
24	381	81.1	217	2	Q6PF11	Q6pf11 homo sapien
25	381	81.1	217	2	AAH57768	Aah57768 homo sapi
26	381	81.1	217	2	AAP35572	Aap35572 homo sapi
27	381	81.1	217	2	AAH62775	Aah62775 homo sapi
28	370	78.7	217	2	Q866U0	Q866u0 pan troglod
29	364.5	77.6	202	2	AAH62475	Aah62475 homo sapi
30	348	74.0	217	2	Q8WND9	Q8wnd9 ateles geof
31	336.5	71.6	202	2	O14643	O14643 homo sapien
32	318	67.7	217	2	Q8MI74	Q8mi74 callithrix
33	310.5	66.1	216	1	SOMA_MESAU	P37886 mesocricetu
34	307.5	65.4	190	1	SOMA_BALBO	P33092 balaenopter
35	306.5	65.2	216	2	O70615	O70615 spalax leuc
36	304.5	64.8	216	1	SOMA_MOUSE	P06880 mus musculu
37	304.5	64.8	216	2	BAB31932	Bab31932 mus muscu
38	304.5	64.8	216	2	BAB31933	Bab31933 mus muscu
39	304.5	64.8	216	2	BAB31935	Bab31935 mus muscu
40	304.5	64.8	216	2	BAB31937	Bab31937 mus muscu
41	304.5	64.8	216	2	BAC27096	Bac27096 mus muscu
42	302.5	64.4	216	1	SOMA_HORSE	P01245 equus cabal
43	302.5	64.4	216	1	SOMA_RABIT	P46407 oryctolagus
44	302.5	64.4	216	1	SOMA_RAT	P01244 rattus norv
45	302.5	64.4	217	1	SOMA_GALSE	Q9gka1 galago sene

ALIGNMENTS

RESULT 1
SOMA_HUMAN
ID SOMA_HUMAN STANDARD; PRT; 217 AA.
AC P01241; Q14405; Q16631; Q9HBZ1; Q9UMJ7; Q9UNL5;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-MAR-1992 (Rel. 21, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE hormone) (Growth hormone 1).
GN Name=GH1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=80034477; PubMed=386281;
RA Roskam W., Rougeon F.;
RT "Molecular cloning and nucleotide sequence of the human growth hormone
RT structural gene.";
RL Nucleic Acids Res. 7:305-320(1979).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=79203293; PubMed=377496;
RA Martial J.A., Hallewell R.A., Baxter J.D., Goodman H.M.;
RT "Human growth hormone: complementary DNA cloning and expression in
RT bacteria.";
RL Science 205:602-607(1979).
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM 1), AND POSSIBLE ALTERNATIVE SPLICING.
RX MEDLINE=82014939; PubMed=6269091;
RA Denoto F.M., Moore D.D., Goodman H.M.;
RT "Human growth hormone DNA sequence and mRNA structure: possible
RT alternative splicing.";
RL Nucleic Acids Res. 9:3719-3730(1981).
RN [4]
RP SEQUENCE FROM N.A.
RX MEDLINE=83182010; PubMed=7169009;
RA Seeburg P.H.;
RT "The human growth hormone gene family: nucleotide sequences show
RT recent divergence and predict a new polypeptide hormone.";
RL DNA 1:239-249(1982).
RN [5]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [6]
RP SEQUENCE FROM N.A. (ISOFORM 3).
RC TISSUE=Pituitary;
RA Gu J., Huang Q.-H., Li N., Xu S.-H., Han Z.-G., Fu G., Chen Z.;

RT "A novel gene expressed in human pituitary.";
RL Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
RN [7]
RP SEQUENCE FROM N.A. (ISOFORM 4).
RC TISSUE=Pituitary;
RX MEDLINE=20402571; PubMed=10931946;
RA Hu R.-M., Han Z.-G., Song H.-D., Peng Y.-D., Huang Q.-H., Ren S.-X.,
RA Gu Y.-J., Huang C.-H., Li Y.-B., Jiang C.-L., Fu G., Zhang Q.-H.,
RA Gu B.-W., Dai M., Mao Y.-F., Gao G.-F., Rong R., Ye M., Zhou J.,
RA Xu S.-H., Gu J., Shi J.-X., Jin W.-R., Zhang C.-K., Wu T.-M.,
RA Huang G.-Y., Chen Z., Chen M.-D., Chen J.-L.;
RT "Gene expression profiling in the human hypothalamus-pituitary-adrenal
RT axis and full-length cDNA cloning.";
RL Proc. Natl. Acad. Sci. U.S.A. 97:9543-9548(2000).
RN [8]
RP SEQUENCE OF 1-26 FROM N.A.
RX MEDLINE=86137393; PubMed=3912261;
RA Gray G.L., Baldridge J.S., McKeown K.S., Heyneker H.L., Chang C.N.;
RT "Periplasmic production of correctly processed human growth hormone in
RT Escherichia coli: natural and bacterial signal sequences are
RT interchangeable.";
RL Gene 39:247-254(1985).
RN [9]
RP SEQUENCE OF 27-217.
RX MEDLINE=69289202; PubMed=5810834;
RA Li C.H., Dixon J.S., Liu W.-K.;
RT "Human pituitary growth hormone. XIX. The primary structure of the
RT hormone.";
RL Arch. Biochem. Biophys. 133:70-91(1969).
RN [10]
RP SEQUENCE OF 27-217, AND REVISIONS.
RX MEDLINE=72143935; PubMed=5144027;
RA Li C.H., Dixon J.S.;
RT "Human pituitary growth hormone. 32. The primary structure of the
RT hormone: revision.";
RL Arch. Biochem. Biophys. 146:233-236(1971).
RN [11]
RP REVISION.
RX MEDLINE=73092028; PubMed=4675454;
RA Bewley T.A., Dixon J.S., Li C.H.;
RT "Sequence comparison of human pituitary growth hormone, human
RT chorionic somatomammotropin, and ovine pituitary growth and lactogenic
RT hormones.";
RL Int. J. Pept. Protein Res. 4:281-287(1972).
RN [12]
RP SEQUENCE OF 27-61 AND 102-124.
RX MEDLINE=71139765; PubMed=5279046;
RA Niall H.D.;
RT "Revised primary structure for human growth hormone.";
RL Nature New Biol. 230:90-91(1971).
RN [13]
RP REVISIONS TO 119-120 AND 157-159.
RX MEDLINE=71153968; PubMed=5279528;
RA Niall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;
RT "Sequences of pituitary and placental lactogenic and growth hormones:
RT evolution from a primordial peptide by gene reduplication.";
RL Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).
RN [14]
RP REVISION.
RA Niall H.D.;
RT "The chemistry of the human lactogenic hormones.";
RL (In) Griffiths K. (eds.);
RL Prolactin and carcinogenesis, Proc. fourth tenovus workshop prolactin,
RL pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).
RN [15]
RP SEQUENCE OF 27-79 (ISOFORM 2).
RX MEDLINE=81117361; PubMed=7462247;
RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,
RA Turner C., Cary P.D., Crane-Robinson C.;
RT "The 20,000 molecular weight variant of human growth hormone.
RT Preparation and some physical and chemical properties.";
RL J. Biol. Chem. 256:2395-2401(1981).
RN [16]
RP SEQUENCE OF 46-80 (ISOFORM 2).
RX MEDLINE=80130196; PubMed=7356479;
RA Lewis U.J., Bonewald L.F., Lewis L.J.;
RT "The 20,000-dalton variant of human growth hormone: location of the
RT amino acid deletions.";
RL Biochem. Biophys. Res. Commun. 92:511-516(1980).
RN [17]
RP DEAMIDATION OF GLN-163 AND ASN-178.
RX MEDLINE=82052997; PubMed=7028740;
RA Lewis U.J., Singh R.N., Bonewald L.F., Seavey B.K.;
RT "Altered proteolytic cleavage of human growth hormone as a result of
RT deamidation.";
RL J. Biol. Chem. 256:11645-11650(1981).
RN [18]
RP PHOSPHORYLATION SITES SER-132 AND SER-176.
RC TISSUE=Pituitary;
RX PubMed=14997482; DOI=10.1002/pmic.200300584;
RA Giorgianni F., Beranova-Giorgianni S., Desiderio D.M.;
RT "Identification and characterization of phosphorylated proteins in the
RT human pituitary.";
RL Proteomics 4:587-598(2004).
RN [19]
RP REVIEW.
RX MEDLINE=99321812; PubMed=10393484;
RA Baumann G.;
RT "Growth hormone heterogeneity in human pituitary and plasma.";
RL Horm. Res. 51 Suppl. 1:2-6(1999).
RN [20]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=88190073; PubMed=3447173;
RA Cohen F.E., Kuntz I.D.;
RT "Prediction of the three-dimensional structure of human growth
RT hormone.";
RL Proteins 2:162-166(1987).
RN [21]
RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
RX MEDLINE=92196577; PubMed=1549776;
RA de Vos A.M., Ultsch M., Kossiakoff A.A.;
RT "Human growth hormone and extracellular domain of its receptor:
RT crystal structure of the complex.";
RL Science 255:306-312(1992).
RN [22]
RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
RX MEDLINE=95075462; PubMed=7984244;
RA Somers W., Ultsch M., de Vos A.M., Kossiakoff A.A.;
RT "The X-ray structure of a growth hormone-prolactin receptor complex.";
RL Nature 372:478-481(1994).
RN [23]
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
RA Chantalat L., Chirgadze N.Y., Jones N., Korber F., Navaza J.,
RA Pavlovsk A.G., Wlodawer A.;
RT "The crystal-structure of wild-type growth-hormone at 2.5-A
RT resolution.";
RL Protein Pept. Lett. 2:333-340(1995).
RN [24]
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
RX MEDLINE=97113023; PubMed=8943276;
RA Sundstroem M., Lundqvist T., Roedin J., Giebel L.B., Milligan D.,
RA Norstedt G.;
RT "Crystal structure of an antagonist mutant of human growth hormone,
RT G120R, in complex with its receptor at 2.9-A resolution.";
RL J. Biol. Chem. 271:32197-32203(1996).
RN [25]
RP VARIANT KOWARSKI SYNDROME CYS-103.
RX MEDLINE=96150232; PubMed=8552145;
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;
RT "Short stature caused by a mutant growth hormone.";
RL N. Engl. J. Med. 334:432-436(1996).
RN [26]
RP ERRATUM.
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;
RL N. Engl. J. Med. 334:1207-1207(1996).
RN [27]

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RP   VARIANT KOWARSKI SYNDROME GLY-138.
RX   MEDLINE=97426478; PubMed=9276733;

  Query Match             97.9%;  Score 460;  DB 1;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.7e-39;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 2
SOMA_MACMU
ID   SOMA_MACMU     STANDARD;      PRT;   217 AA.
AC   P33093;
DT   01-OCT-1993 (Rel. 27, Created)
DT   01-OCT-1994 (Rel. 30, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE   hormone) (Growth hormone 1).
GN   Name=GH1;
OS   Macaca mulatta (Rhesus macaque).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC   Cercopithecinae; Macaca.
OX   NCBI_TaxID=9544;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=94008724; PubMed=8404617;
RA   Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT   "Cloning of four growth hormone/chorionic somatomammotropin-related
RT   complementary deoxyribonucleic acids differentially expressed during
RT   pregnancy in the rhesus monkey placenta.";
RL   Endocrinology 133:1744-1752(1993).
RN   [2]
RP   SEQUENCE OF 27-217.
RX   MEDLINE=86129460; PubMed=3080959;
RA   Li C.H., Chung D., Lahm H.W., Stein S.;
RT   "The primary structure of monkey pituitary growth hormone.";
RL   Arch. Biochem. Biophys. 245:287-291(1986).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; L16556; AAA18842.1; -.
DR   PIR; I67410; I67410.
DR   HSSP; P01241; 1AXI.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Direct protein sequencing; Hormone; Pituitary; Signal.
FT   SIGNAL        1     26
FT   CHAIN        27    217       Somatotropin.
FT   DISULFID     79    191       By similarity.
FT   DISULFID    208    215       By similarity.
FT   CONFLICT    100    100       E -> Q (in Ref. 2).
FT   CONFLICT    179    179       N -> D (in Ref. 2).
SQ   SEQUENCE   217 AA;  24913 MW;  2C5180341EEC46D0 CRC64;

  Query Match             97.9%;  Score 460;  DB 1;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.7e-39;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 3
SOMA_PANTR
ID   SOMA_PANTR     STANDARD;      PRT;   217 AA.
AC   P58756;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE   hormone) (Growth hormone 1).
GN   Name=GH1;
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT   "Independent duplication of the growth hormone gene in three
RT   Anthropoidean lineages.";
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues (By similarity).
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF374232; AAL72284.1; -.
DR   HSSP; P01241; 1HWG.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL        1     26       By similarity.
FT   CHAIN        27    217       Somatotropin.
FT   DISULFID     79    191       By similarity.
FT   DISULFID    208    215       By similarity.
SQ   SEQUENCE   217 AA;  24843 MW;  FEA295EDE0518674 CRC64;

  Query Match             97.9%;  Score 460;  DB 1;  Length 217;
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 Best Local Similarity   98.9%;  Pred. No. 1.7e-39;
 Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
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Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 4
Q6IYF0
ID   Q6IYF0      PRELIMINARY;      PRT;   217 AA.
AC   Q6IYF0;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Growth hormone 1 variant 2.
GN   Name=GH1;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Jorge A.A.L., Arnhold I.J.P., Mendonca B.B.;
RL   Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY613432; AAT11509.1; -.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  24946 MW;  72D079DF52BDB51A CRC64;

  Query Match             97.9%;  Score 460;  DB 2;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.7e-39;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 5
AAT11509
ID   AAT11509    PRELIMINARY;      PRT;   217 AA.
AC   AAT11509;
DT   20-MAY-2004 (TrEMBLrel. 27, Created)
DT   20-MAY-2004 (TrEMBLrel. 27, Last sequence update)
DT   20-MAY-2004 (TrEMBLrel. 27, Last annotation update)
DE   Growth hormone 1 variant 2.
GN   GH1.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Jorge A.A.L., Arnhold I.J.P., Mendonca B.B.;
RT   "New allelic variant (G152R) in growth hormone (GH) gene associated
RT   with idiopathic short stature.";
RL   Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY613432; AAT11509.1; -.
SQ   SEQUENCE   217 AA;  24946 MW;  72D079DF52BDB51A CRC64;

  Query Match             97.9%;  Score 460;  DB 2;  Length 217;
  Best Local Similarity   98.9%;  Pred. No. 1.7e-39;
  Matches   90;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
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Db         27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 6
Q6IYF1
ID   Q6IYF1      PRELIMINARY;      PRT;   217 AA.
AC   Q6IYF1;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Growth hormone 1 variant 1.
GN   Name=GH1;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Jorge A.A.L., Arnhold I.J.P., Mendonca B.B.;
RL   Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY613431; AAT11508.1; -.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  24875 MW;  12DB1B92F63934D8 CRC64;

  Query Match             97.0%;  Score 456;  DB 2;  Length 217;
  Best Local Similarity   97.8%;  Pred. No. 4.5e-39;
  Matches   89;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||| |||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNVMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 7
AAT11508
ID   AAT11508    PRELIMINARY;      PRT;   217 AA.
AC   AAT11508;
DT   20-MAY-2004 (TrEMBLrel. 27, Created)
DT   20-MAY-2004 (TrEMBLrel. 27, Last sequence update)
DT   20-MAY-2004 (TrEMBLrel. 27, Last annotation update)
DE   Growth hormone 1 variant 1.
GN   GH1.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Jorge A.A.L., Arnhold I.J.P., Mendonca B.B.;
RT   "New allelic variant (A39V) in growth hormone (GH) gene associated
RT   with GH deficiency in heterozygous state.";
RL   Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY613431; AAT11508.1; -.
SQ   SEQUENCE   217 AA;  24875 MW;  12DB1B92F63934D8 CRC64;
```

```
  Query Match           97.0%;  Score 456;  DB 2;  Length 217;
  Best Local Similarity  97.8%;  Pred. No. 4.5e-39;
  Matches   89;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||| |||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNVMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||||||||||||||||||||||||||||||
Db         87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 8
Q8WNE0
ID   Q8WNE0      PRELIMINARY;      PRT;   217 AA.
AC   Q8WNE0;
DT   01-MAR-2002 (TrEMBLrel. 20, Created)
DT   01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Growth hormone.
GN   Name=GH-N;
OS   Ateles geoffroyi (Black-handed spider monkey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Ateles.
OX   NCBI_TaxID=9509;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF374234; AAL72286.1; -.
DR   HSSP; P01241; 1A22.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  24894 MW;  425829FF41EEAAE6 CRC64;

  Query Match           92.6%;  Score 435;  DB 2;  Length 217;
  Best Local Similarity  92.3%;  Pred. No. 6.7e-37;
  Matches   84;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||| |||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLLDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |::::|||||||||||||||||||| ||||
Db         87 PASKKETQQKSNLELLRISLLLIQSWFEPVQ 117


RESULT 9
SOMA_SAIBB
ID   SOMA_SAIBB     STANDARD;      PRT;   217 AA.
AC   P58343;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Somatotropin precursor (Growth hormone).
GN   Name=GH1;
OS   Saimiri boliviensis boliviensis (Bolivian squirrel monkey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
OX   NCBI_TaxID=39432;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=21265430; PubMed=11371582;
RA   Liu J.C., Makova K.D., Adkins R.M., Gibson S., Li W.H.;
RT   "Episodic evolution of growth hormone in primates and emergence of the
RT   species specificity of human growth hormone receptor.";
RL   Mol. Biol. Evol. 18:945-953(2001).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues (By similarity).
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF339060; AAK62287.1; -.
DR   HSSP; P01241; 1A22.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL       1     26       By similarity.
FT   CHAIN       27    217       Somatotropin.
FT   DISULFID    79    191       By similarity.
FT   DISULFID   208    215       By similarity.
SQ   SEQUENCE   217 AA;  24864 MW;  9515289992C529F7 CRC64;

  Query Match           92.1%;  Score 433;  DB 1;  Length 217;
  Best Local Similarity  91.2%;  Pred. No. 1.1e-36;
  Matches   83;  Conservative    5;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              ||||||||| |||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLLDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |::::|||||||||||||||:||||| ||||
Db         87 PASKKETQQKSNLELLRISLILIQSWFEPVQ 117


RESULT 10
SOMA_CALJA
ID   SOMA_CALJA     STANDARD;      PRT;   217 AA.
AC   Q9GMB3;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Somatotropin precursor (Growth hormone).
GN   Name=GH1;
OS   Callithrix jacchus (Common marmoset).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callithrix.
OX   NCBI_TaxID=9483;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Wallis O.C., Wallis M.;
RT   "Cloning and characterisation of a putative growth hormone encoding
RT   gene from the marmoset (Callithrix jacchus).";
RL   Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues (By similarity).
```

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CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AJ297563; CAC03481.1; -.
DR   HSSP; P01241; 1A22.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Hormone; Pituitary; Signal.
FT   SIGNAL       1     26       By similarity.
FT   CHAIN       27    217       Somatotropin.
FT   DISULFID    79    191       By similarity.
FT   DISULFID   208    215       By similarity.
SQ   SEQUENCE   217 AA;  24959 MW;  E102151A12CB6192 CRC64;

  Query Match             91.9%;  Score 432;  DB 1;  Length 217;
  Best Local Similarity   91.2%;  Pred. No. 1.4e-36;
  Matches   83;  Conservative    5;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              ||||||||| |||||||||||||||||||||||||||||||||||||||||| |||||||
Db         27 FPTIPLSRLLDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |:::|||||||||||||:|||||||| ||||
Db         87 PASKKETQQKSNLELLRMSLLLIQSWFEPVQ 117


RESULT 11
SOM2_PANTR
ID   SOM2_PANTR     STANDARD;      PRT;   217 AA.
AC   P58757;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Growth hormone variant precursor (GH-V) (Placenta-specific growth
DE   hormone) (Growth hormone 2).
GN   Name=GH2;
OS   Pan troglodytes (Chimpanzee).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX   NCBI_TaxID=9598;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT   "Independent duplication of the growth hormone gene in three
RT   Anthropoidean lineages.";
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- TISSUE SPECIFICITY: Expressed in the placenta.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF374233; AAL72285.1; -.
DR   HSSP; P01241; 1A22.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Glycoprotein; Hormone; Placenta; Signal.
FT   SIGNAL       1     26       By similarity.
FT   CHAIN       27    217       Growth hormone variant.
FT   DISULFID    79    191       By similarity.
FT   DISULFID   208    215       By similarity.
SQ   SEQUENCE   217 AA;  24990 MW;  1592A429075677DE CRC64;

  Query Match             91.5%;  Score 430;  DB 1;  Length 217;
  Best Local Similarity   93.4%;  Pred. No. 2.2e-36;
  Matches   85;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||||:|||:|||||||||| |||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRAHRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||| :|||||||||||||||||||||||||
Db         87 PSNRVKTQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 12
Q6FH54
ID   Q6FH54      PRELIMINARY;      PRT;   217 AA.
AC   Q6FH54;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   GH2 protein.
GN   Name=GH2;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Halleck A., Ebert L., Mkoundinya M., Schick M., Eisenstein S.,
RA   Neubert P., Kstrang K., Schatten R., Shen B., Henze S., Mar W.,
RA   Korn B., Zuo D., Hu Y., LaBaer J.;
RL   Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; CR541902; CAG46700.1; -.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE   217 AA;  25001 MW;  F24C05312EB37988 CRC64;

  Query Match             90.0%;  Score 423;  DB 2;  Length 217;
  Best Local Similarity   92.3%;  Pred. No. 1.2e-35;
  Matches   84;  Conservative    3;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||| ||:|||:|||||||||| |||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
              |||| :|||||||||||||||||||||||||
Db         87 PSNRAKTQQKSNLELLRISLLLIQSWLEPVQ 117
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RESULT 13
SOM2_HUMAN
ID   SOM2_HUMAN     STANDARD;      PRT;   217 AA.
AC   P01242; P09587;
DT   21-JUL-1986 (Rel. 01, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Growth hormone variant precursor (GH-V) (Placenta-specific growth
DE   hormone) (Growth hormone 2).
GN   Name=GH2;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A. (ISOFORM 1).
RX   MEDLINE=83182010; PubMed=7169009;
RA   Seeburg P.H.;
RT   "The human growth hormone gene family: nucleotide sequences show
RT   recent divergence and predict a new polypeptide hormone.";
RL   DNA 1:239-249(1982).
RN   [2]
RP   SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).
RX   MEDLINE=88243769; PubMed=3379057;
RA   Cooke N.E., Ray J., Emery J.G., Liebhaber S.A.;
RT   "Two distinct species of human growth hormone-variant mRNA in the
RT   human placenta predict the expression of novel growth hormone
RT   proteins.";
RL   J. Biol. Chem. 263:9001-9006(1988).
RN   [3]
RP   SEQUENCE FROM N.A. (ISOFORM 1).
RX   MEDLINE=89024984; PubMed=2460050;
RA   Igout A., Scippo M.L., Frankenne F., Hennen G.;
RT   "Cloning and nucleotide sequence of placental hGH-V cDNA.";
RL   Arch. Int. Physiol. Biochim. 96:63-67(1988).
RN   [4]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=89307277; PubMed=2744760;
RA   Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA   Seeburg P.H.;
RT   "The human growth hormone locus: nucleotide sequence, biology, and
RT   evolution.";
RL   Genomics 4:479-497(1989).
RN   [5]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Placenta;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [6]
RP   REVIEW.
RX   MEDLINE=99321812; PubMed=10393484;
RA   Baumann G.;
RT   "Growth hormone heterogeneity in human pituitary and plasma.";
RL   Horm. Res. 51 Suppl. 1:2-6(1999).
CC   -!- FUNCTION: Plays an important role in growth control. Its major
CC       role in stimulating body growth is to stimulate the liver and
CC       other tissues to secrete IGF-1. It stimulates both the
CC       differentiation and proliferation of myoblasts. It also stimulates
CC       amino acid uptake and protein synthesis in muscle and other
CC       tissues.
CC   -!- SUBUNIT: Monomer, dimer, trimer, tetramer and pentamer, disulfide-
CC       linked or non-covalently associated, in homopolymeric and
CC       heteropolymeric combinations. Can also form a complex either with
CC       GHBP or with the alpha2-macroglobulin complex.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- ALTERNATIVE PRODUCTS:
CC       Event=Alternative splicing; Named isoforms=2;
CC       Name=1; Synonyms=GH-V1;
CC         IsoId=P01242-1; Sequence=Displayed;
CC       Name=2; Synonyms=GH-V2;
CC         IsoId=P01242-2; Sequence=VSP_006203;
CC         Note=No experimental confirmation available;
CC   -!- TISSUE SPECIFICITY: Expressed in the placenta.
CC   -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC   ---------------------------------------------------------------------
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CC   ---------------------------------------------------------------------
DR   EMBL; K00470; AAA98619.1; -.
DR   EMBL; J03756; AAB59547.1; -.
DR   EMBL; J03756; AAB59548.1; -.
DR   EMBL; M38451; AAA35891.1; -.
DR   EMBL; J03071; AAA52552.1; -.
DR   EMBL; BC020760; AAH20760.1; -.
DR   PIR; A28072; STHUV2.
DR   PIR; D32435; STHUV.
DR   HSSP; P01241; 1A22.
DR   Genew; HGNC:4262; GH2.
DR   MIM; 139240; -.
DR   GO; GO:0005179; F:hormone activity; TAS.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW   Alternative splicing; Glycoprotein; Hormone; Placenta; Polymorphism;
KW   Signal.
FT   SIGNAL       1     26
FT   CHAIN       27    217       Growth hormone variant.
FT   DISULFID    79    191       By similarity.
FT   DISULFID   208    215       By similarity.
FT   CARBOHYD   166    166       N-linked (GlcNAc. . .) (Potential).
FT   VARSPLIC   153    217       RLEDGSPRTGQIFNQSYSKFDTKSHNDDALLKNYGLLYCFR
FT                               KDMDKVETFLRIVQCRSVEGSCGF -> VRVAPGIPNPGAP
FT                               LASRDWGEKHCCPLFSSQALTQENSPYSSFPLVNPPGLSLQ
FT                               PGGEGGKWMNERGREQCPSAWPLLLFLHFAEAGRWQPPDWA
FT                               DLQSVLQQV (in isoform 2).
FT                               /FTId=VSP_006203.
FT   VARIANT     90     90       R -> W (in dbSNP:5389).
FT                               /FTId=VAR_014591.
FT   CONFLICT   109    109       I -> T (in Ref. 2).
SQ   SEQUENCE   217 AA;  24999 MW;  7B9324698E822F96 CRC64;

  Query Match             89.8%;  Score 422;  DB 1;  Length 217;
  Best Local Similarity   92.3%;  Pred. No. 1.5e-35;
  Matches   84;  Conservative    3;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||| ||:|||:|||||||||||| |||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86
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Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
                ||||  :|||||||||||||||||||||||||
Db         87 PSNRVKTQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 14
O14644
ID   O14644      PRELIMINARY;      PRT;   245 AA.
AC   O14644;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Placental growth hormone isoform hGH-V3 precursor.
GN   Name=hGH-V;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Full-term placenta;
RX   MEDLINE=98373737; PubMed=9709963;
RA   Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
RA   Carlsson L.M.S., Carlsson B.;
RT   "Cloning of two novel growth hormone transcripts expressed in human
RT   placenta.";
RL   J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
DR   EMBL; AF006061; AAB71829.1; -.
DR   HSSP; P01241; 1A22.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
KW   Signal.
FT   SIGNAL        1     26       Potential.
SQ   SEQUENCE   245 AA;  27101 MW;  14CC7F8CD75D91C8 CRC64;

  Query Match             89.8%;  Score 422;  DB 2;  Length 245;
  Best Local Similarity   92.3%;  Pred. No. 1.7e-35;
  Matches   84;  Conservative    3;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||| ||:|||:|||||||||||| |||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
                ||||  :|||||||||||||||||||||||||
Db         87 PSNRVKTQQKSNLELLRISLLLIQSWLEPVQ 117


RESULT 15
Q6FH32
ID   Q6FH32      PRELIMINARY;      PRT;   217 AA.
AC   Q6FH32;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   GH2 protein (Fragment).
GN   Name=GH2;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Halleck A., Ebert L., Mkoundinya M., Schick M., Eisenstein S.,
RA   Neubert P., Kstrang K., Schatten R., Shen B., Henze S., Mar W.,
RA   Korn B., Zuo D., Hu Y., LaBaer J.;
RL   Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; CR541924; CAG46722.1; -.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; Hormone_1; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
FT   NON_TER     217     217
SQ   SEQUENCE   217 AA;  25010 MW;  075C0EF63C15AAF5 CRC64;

  Query Match             88.7%;  Score 417;  DB 2;  Length 217;
  Best Local Similarity   91.2%;  Pred. No. 4.9e-35;
  Matches   83;  Conservative    3;  Mismatches    5;  Indels    0;  Gaps    0;

Qy          2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
              |||||||||||||||||| ||:|||:|||||||||||| |||||||||||||||| |||||||
Db         27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86

Qy         62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
                ||||  :|||||||||| ||||||||||||||
Db         87 PSNRVKTQQKSNLELLHISLLLIQSWLEPVQ 117


Search completed: November  2, 2004, 20:20:29
Job time : 90.1144 secs
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